The Lumleian Lectures

ON THE

STRUCTURAL DISEASES OF THE HEART CONSIDERED FROM THE POINT OF VIEW OF PROGNOSIS.

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LECTURE III.

Fatty degeneration.—No form of heart disease is regarded with so much apprehension as fatty degeneration. More than any other, it carries with it the danger of sudden death and the liability to angina pectoris, and, although happily the disease is not very common, it would be a most important acquisition to be able to make the diagnosis with certainty at an early period. The important point in its causation is that the primary change is atrophy of the muscle substance, the invasion of the fibres by fatty matter being secondary to this and consequent upon it. Disease of the coronary arteries being thus a cause of degeneration of the heart, the existence of conditions which may lead to the implication of the coronary arteries or their orifices in morbid processes will warrant a suspicion that cardiac weakness, which may be recognised, is the result of degeneration. For example, an aortic murmur coming on after middle age may not indicate serious valvular lesion; but, as it is probably the result of atheromatous changes in the valves or arterial walls in close proximity to the orifices of the coronary arteries, there is reason to apprehend that the disease may cause obstruction here or may have extended to the vessels themselves, and progressive weakness of the heart, were this to supervene, would be attributable to degenerative change in its walls. Acute aortitis is recognised mainly by a train of effects on the heart produced in the same way—i.e., by blocking of the mouth of the coronary arteries.

But there may be fatty degeneration of the heart when the coronary arteries are healthy. It is usually present, sometimes in a very advanced degree, in pernicious anæmia, and granular degeneration, which is an acute form of the disease, is a constant effect of severe typhoid fever and of fatal phosphorus poisoning. Cases occur from time to time in which a patient convalescing from typhoid fever dies suddenly on sitting up in bed. Here, again, in fatal anæmia and enteric fever, the process must be the resultant of a balance on the wrong side as between the catabolic and anabolic operations, disintegration and repair; but it is now the quality of the blood which is at fault, not the supply, and in typhoid fever there is also the injurious effect on the nutritional processes of long-continued high temperature. It is not to be wondered at that in pernicious anæmia and fever the heart suffers more than the voluntary muscles, since these are at rest and there is no functional wear and tear, whereas in the heart this is continuous and excessive. From what takes place in typhoid fever, again, it is seen how rapid degeneration may be. Diabetes, alcoholic excess, tippling rather than drunkenness, a sedentary mode of life, may conduce to fatty degeneration of the heart, probably through deterioration of the blood, or it may be secondary to myocarditis. Cases are met with for which no explanation can be found, and we are almost compelled to assume that there may be a defective assimilative action in the muscle cells of the heart, or possibly some unrecognised blood condition.

There is very little that is characteristic in the symptoms. In a large proportion of cases the subject of this affection has had no ailment which has led him to consult a medical man, when he is overtaken by sudden death during exertion or excitement, or the administration of chloroform, or after a full meal. Or the excitement or exertion may be passed through safely and death follow some hours later, next day even. Rupture of the heart is one mode of termination, and this may take place on very slight provocation. Sometimes the patient has been engaged in his usual avocation up to the moment of its occurrence. In one case, which came under my observation, an old gentleman of quiet retired habits, with nothing beyond the weakness incident to age, was heard to knock at the wall against which his bed was placed, and was found dead, the bedclothes scarcely being disturbed. A neat slit was found in the left ventricle near the apex, close to and parallel with the septum.

When the course of the disease has been sufficiently chronic to permit of the recognition of symptoms (which, in my experience, is chiefly when the degeneration is secondary to change in the coronary arteries, or to old-standing hypertrophy, with or without dilatation) they will be such as are produced by a slackening circulation, and they are not so different from those attending dilatation as to permit of any distinction being drawn between the two conditions in an early stage without physical examination. There may perhaps be greater fluctuations in dilatation, though even in degeneration there may be great temporary improvement under care and treatment. In advanced stages characteristic differences make their appearance. The symptoms of advanced dilatation have already been described; those attending degeneration are evidences of heart failure of another kind. A noteworthy point is that well-marked dropsy is rare, and probably never occurs in uncomplicated degeneration. The significance of this is that the special effect of the disease is defective pressure in the venous system, and it is to this are due the syncopal, apoplectic, and epileptiform attacks, which, together with angina pectoris, are the most characteristic later effects of fatty degeneration. The syncopal attacks vary greatly in intensity. So far as they have come under my observation, they have been marked rather by duration than intensity, and have rarely been so complete as to be attended with absence of consciousness; they have usually been accompanied by prolonged coldness of the extremities and of the surface. I have not met with instances of sudden and complete loss of consciousness and immediate recovery as in dilatation. These syncopal attacks are very significant, and are often premonitory of fatal syncope. The apoplectiform seizures are very remarkable, and in the absence of history and without examination they are not distinguishable from the apoplectic condition resulting from cerebral hæmorrhage. The epileptiform attacks are not often violent, but resemble petit mal rather than a typical epileptic fit. While, however, the convulsion may not be severe, there is profound unconsciousness, not like epileptic coma, but of a syncopal character, and the pulse may be extremely infrequent, sometimes less than 20 in the minute. In my judgment the heart failure manifested by the slow pulse and the consequent arrest of the cerebral circulation are the cause of the fits, and it is not the epileptiform attack that affects the action of the heart. By the time any of these forms of attack occur the diagnosis of fatty heart is usually sufficiently clear; but I have had under observation a case of very slow pulse with petit mal, in which the strength and volume of the pulse and the degree of impulse of which the heart was capable precluded the idea of advanced degeneration. Is there anything characteristic in the appearance of a patient suffering from fatty degeneration of the heart? A greasy state of the skin with a sallow pallor of the face has been described, but nothing of the kind is present in a large majority of the cases. Many of the subjects of the disease retain the look of health for a long time, and even up to the moment when the heart ceases to beat.

Pulse and physical signs.—The most constant and significant feature of the pulse is that it is short and unsustained. The size of the artery at the wrist and the condition of its walls may vary greatly. When the arterial coats are healthy they are apt to feel extremely thin. The pulse-rate may be regular and about normal, or extremely irregular both in force and time, and it may be frequent or slow. A very slow pulse with extreme low tension is most characteristic, but then it is the most rare. The physical signs may be described as negative. Unless degeneration has attacked a heart already enlarged the size will be normal. If the fatty change is at all advanced impulse can neither be seen nor felt, or if perceptible it is only as a faint vibration. A heart in this condition is incapable either of giving a distinct push or maintaining continuous pressure in the arteries. The sounds are weak, sometimes so weak as to be almost inaudible, but except that the first is short there is nothing about them; the intervals, again, are usually normal. The very absence of murmur, or of conspicuous modification of the sounds or intervals, and of disturbance of the relation between the two sides of the heart or of increase of dimensions, when symptoms of serious slackening of the circulation are present, and especially

when there have been anginal, syncopal, or apoplectic attacks, adds gravity to the case. But a weak, short, unsustained pulse is common as a constitutional peculiarity, or may at any period of life be simply a result of general debility, and impulse and apex beat may be entirely absent and the sounds may be short and weak. In young people there is no danger of such weakness being taken as an indication of degeneration of the heart, but it may arouse anxiety after middle age, especially if there is also irregularity. It is important to be able to distinguish between functional weakness of this kind and weakness arising from organic disease. Usually this is accomplished by making the patient walk briskly. A few steps will often be sufficient. If the heart is sound, it rises to the occasion; the pulse beat and sounds are all more distinct and strong and regular, whereas the fatty heart "goes to pieces," and the pulse becomes irregular and shorter than ever, or may even disappear.

Until the disease is far advanced the diagnosis of fatty degeneration of the heart is not easy, and is scarcely to be made without more than one opportunity of examination. When the diagnosis has once been made, the prognosis for the most part can contemplate only one result: a fatal termination is merely a question of time and circumstance. Excluding cases in which death has been sudden without warning, the shortest period in my experience over which characteristic symptoms have extended, together with recognised physical signs, has been about six weeks; several patients have survived the diagnosis two years before justifying it by dying suddenly. But circumstance as well as time enters into the question. A slight effort or a fall, a little hurry or excitement, too hearty a meal, an attack of flatulent indigestion or constipation, a chill, may hurry on the fatal termination; and, on the other hand, judicious care may postpone it till the heart is completely worn out and comes to a standstill.

The question must be asked, Is fatty degeneration of the heart ever cured or arrested? If the granular disintegration which is produced by typhoid fever is to be included under the term, the answer must undoubtedly be, Yes. The heart may ultimately regain structural soundness and functional vigour when during the fever the first sound has been completely lost, and the impulse has been scarcely perceptible; and when degeneration has been the result of other forms of blood poisoning or deterioration, it ought to be possible, and now and then does occur, that recovery of the heart should follow a return to a healthy state of the blood.

More than ten years ago I came to the conclusion that a gentleman still living, aged at that time about fifty-five, was suffering from fatty degeneration of the heart. Spare in habit, strictly moderate in eating and drinking, regular in taking exercise and a great pedestrian, he rapidly lost strength without recognisable cause, became breathless on very slight exertion, so that he could scarcely walk 100 yards without actually stopping, either to get his breath, or on account of anginoid pain. On one occasion at least, while sitting in his chair, he became suddenly pale and unconscious; his head fell on his chest, and the jaw dropped. With this change in his health, the pulse and heart were extremely weak. He never would relinquish exercise, but continued to walk, however slowly, and at whatever cost of pain and distress, every day, exercising great self-command and measuring his strength very exactly. Little by little he gained ground, and he is now in fair health, but capable of very little in the way of work. It should be added that never at any time were his intellectual faculties at all affected. This case may have been an instance of arrest and partial recovery.

There is not much to be said on the subject of treatment. Life should be made as easy as possible for the sufferer. He should have as much sun and fresh air as his strength and the weather will permit, but on no account must he be exposed to severe cold. Such exercise as he is capable of is good for him, but he should never incur angina or extreme breathlessness. His food should be simple and his meals strictly regular, and the bowels should be kept well open. The rectification of functional derangements will be of service, and tonics may do good.

Right ventricle.—Little has been said about the right ventricle in the discussion of the different structural diseases of the heart, for the reason that affections of this ventricle have been reserved for special consideration. It has seemed to me that our ideas of the effects of the disease of the right ventricle have been to much based upon a study of the symptoms which attend affections of this ventricle secondary to disease of the left ventricle or its valves, which therefore are really attributable to the original disease. Undoubtedly the supervention of dilatation of the right ventricle and of reflux through the tricuspid orifice allows back pressure to be brought to bear upon the veins, but this only intensifies pre-existing symptoms and makes no change in their character. We are perhaps justified in assuming that the venous back pressure, to which insufficiency of the tricuspid valve will give rise, will in some degree produce the same results, whatever the state of the left side of the heart, and whether or not the tricuspid regurgitation has been caused by obstruction in the pulmonary circulation, but the conditions are fundamentally different when the tricuspid reflux is primary. It is not impossible, for example, that a sound and strong left ventricle may come to the aid of the right ventricle, just as the right ventricle so constantly comes to the aid of the left, notwithstanding the great length of the systemic as compared with the pulmonic circuit and the weak blood pressure in the systemic veins. The pressure which will cause the blood to spurt for two or three feet in venesection might carry a current through the capillaries of the lungs, aided by the respiratory movement of the valves of pulmonary artery. It has, moreover, seemed to me that weakness of the right ventricle, the left ventricle being in a normal condition, in some cases have given rise to symptoms due rather to inadequate supply of blood to the left side of the heart than to damming back of blood in the veins. I have, for example, met with several instances of primary tricuspid regurgitation, either as a constant condition or coming on under very slight provocation. When any effect of this has been traceable it has not been breathlessness on exertion, but tendency to syncope. Perhaps this is what we ought to expect, since the occurrence of tricuspid regurgitation on the breathlessness of violent exertion has been regarded as a safety-valve action, since, also, shortness of breath results from mitral regurgitation. A difference of symptoms ought to attend mitral and tricuspid insufficiency, one giving rise to turgescence and high pressure in the pulmonary circulation, the other to deficient supply of blood and low pressure. If mitral disease produces pulmonary symptoms tricuspid disease may well produce systemic symptoms. In a few cases which have come under my notice, in which the right ventricle has appeared to be predominantly or almost exclusively affected by asthenia or degeneration, the effects have been similar to those of tricuspid regurgitation.

A patient aged seventy-two, who had never had a day's illness in his life, consulted me in 1879, complaining of failing vigour, giddiness on running to catch a 'bus, and tendency to fall asleep in the day. He was constipated; the pulse was not more than 60, was sometimes tense, sometimes soft. The heart sounds generally were weak, the aortic second accentuated. In April, 1881, symptoms, which had previously been relieved, returned, and it was now found that over all parts of the right ventricle, and even over the pulmonary area, there was absolute silence. No impulse or apex beat could be detected, but at the apex the sounds were normal; the aortic second sound was accentuated. The pulse was 72, a little irregular, but fair in force and length. A month later he was much better. The pulse was 60, fair in strength and length. The left ventricle sounds were good, the right ventricle sounds faintly audible. From this time neither the right ventricle first sound nor the pulmonary second sound was ever at any time audible. The pulse varied considerably both in frequency and in tension, but it was usually well sustained, indicating considerable vigour of the left ventricle, and the left ventricle sounds were good. He had from time to time severe fainting attacks, which sometimes threatened to prove fatal. He was always worse when the bowels were not kept freely open. In June, 1883, the pulse is described as large, full, and tense; the aortic second sound was accentuated at the apex in the right second space; there were no right ventricle sounds. Towards the end of 1884, when not under my care, the bowels were allowed to get confined, and he fell into a condition of stupor, with incontinence of urine and fæces. He recovered from this condition after free aperients, and was again able to go about, though his mental faculties were impaired and he was childish, but in November, 1885, thrombosis of the left middle cerebral artery took place,

giving rise to hemiplegia and aphasia, of which he died. The entire absence of right ventricle sounds in this case was very remarkable, and I cannot doubt that there was really no action of this ventricle. As it seemed to me impossible that the pulmonary circulation could be maintained without its aid, I formed a very unfavourable prognosis, and when this was belied I watched the case with extreme care—first to make sure that my observation was not at fault, and next in order that I might arrive at some comprehension of the problem presented by the facts. The conclusion appeared to be unavoidable that the left ventricle was carrying on the circulation through the lungs; it was throughout capable of maintaining high tension in the arteries. The amount of blood passing through the pulmonary vessels under these conditions and reaching the left auricle would be easily influenced and would vary greatly, and the fluctuating supply of blood to the left ventricle would account for the varying character of the pulse.

One of the most serious effects of weakness of the right ventricle is met with in disease of the mitral valve. When the mitral valve from thickening and shrinking of the curtains and tendinous cords becomes inefficient, the right ventricle is for a time the rampart by which the reflux of blood is arrested and is a reinforcement to the crippled left ventricle. When we hear a systolic apex murmur telling of mitral regurgitation, the murmur itself gives no trustworthy information as to the amount of blood which is carried back into the auricle. We gather this mainly from the effects upon the right ventricle. The first of these is accentuation of the pulmonary second sound, indicating increased pressure in the pulmonary circulation, and following on this hypertrophy of the right ventricle, by means of which the obstruction to the passage of blood through the lungs is overcome. It is by the augmented strength of the right ventricle that the mitral leakage is neutralised and a working equilibrium established. The greater the regurgitation the greater the amount of hypertrophy required to compensate for it. The change in the right ventricle thus becomes, together with the accompanying dilatation of the left ventricle, a measure of the regurgitation. When, therefore, we detect a mitral systolic murmur, we at once examine the right ventricle in order to gather from its condition information as to the amount of reflux which is not yielded by the murmur itself. This is specially the case when symptoms of failing compensation have set in. But if the right ventricle is in a state of degeneration or great weakness, these indications fail us altogether, while dropsy and other evidence of serious stasis and back pressure in the venous system are rapidly developed for lack of hypertrophy or compensatory effort on the part of the right ventricle. Under these circumstances the prognosis is extremely grave. The right ventricle is unable to come to the aid of the left, the mechanism of compensation makes default, and the back pressure bears at once upon the venous system. The fulcrum for some of our most efficacious therapeutic measures is missing—we dare not open a vein, however great the respiratory embarrassment and cyanosis, the effect of leeching over the liver is less certainly good, and a dose of calomel is not well borne. Recovery is rare, and twice it has happened in my experience that during apparent convalescence, when an unfavourable prognosis seemed to have been belied, the patient has died suddenly when beginning to walk about. Similar conditions result from time to time from adhesion of the pericardium. The right ventricle suffers much more than the left from pericarditis. During the attack the muscular fibres immediately subjacent to the serous membrane, which are paralysed by the inflammation, form an appreciable proportion of the thin wall of this ventricle, which is thus weakening and prone to dilate, whereas, although the superficial layer of the muscular fibres of the left ventricle is similarly paralysed, they constitute a relatively unimportant part of the mass of the ventricular muscle. Again, the right ventricle is much more hampered by adhesion of the pericardium than the left, partly because its superficial area is relatively large, but chiefly because of the thinness of its walls; and when the adhesions are general, and especially if there is also adherence of the pericardium to the chest wall and diaphragm, efficient contraction of this ventricle must be impossible. Cases of this kind, then, are not uncommon. There is valvular disease, mitral or aortic; from the size of the heart, the position and character of the apex beat and impulse the persistence of sounds in spite of the murmurs, there are gounds for concluding that the valvular lesion is not very great, but there is a premature development of symptoms. Under such circumstances we may often confidently infer adhesion of the pericardium when it cannot be demonstrated by physical signs. The right ventricle may be obviously labouring and the pulmonary second sound may be less definite and pronounced, which will tend to corroborate the conclusion arrived at.

The right ventricle is undoubtedly sometimes the cause of sudden death; and when the heart is embarrassed or stopped by pressure upwards of the diaphragm by a distended stomach or colon, it must be on the right ventricle that the pressure takes effect. This part of the heart rests upon the diaphragm, and will be directly compressed when it is pushed up. Probably it is the diastole which is mostly interfered with, and it would seem that the proper expansion and filling of the ventricle must be impossible when the pressure upon it is such that the heart is carried up bodily by the diaphragm, especially when the ventricle is dilated and over-disturbed.

A melancholy instance of this occurred in my experience in the case of an eminent artist. He was suffering from mitral stenosis and regurgitation and had an extreme degree of distension of the right side of the heart with tricuspid regurgitation, and suffered especially from sleeplessness and dyspnœa so that his misery was insupportable and life was despaired of. The application of leeches over the liver, which was enormously swollen, and the administration of calomel at once gave him sleep, and by a repetition of the leeches and regular employment of mercurial aperients, with the usual heart tonics, he so far recovered as to be able to leave his room, and his convalescence seemed to be assured. One morning after a hearty breakfast in bed the nurse was about to wash his face and hands as usual, but he impatiently bade her give him the basin and stand aside. He sat up in bed with the basin between his knees, and when the time came for washing his face bent forwards over it. The pressure upwards of a full stomach caused by this movement brought the weak right ventricle to a standstill, and the patient fell back dead. One cannot help being reminded in relating this incident of the rough-and-ready but effectual way in which a man is brought to who faints after the frightful exertion of a boat race. He is seated on the ground, and his body is bent forcibly forwards so that his head almost comes to the ground between his knees, or if he has fallen forwards over his oar, it is done while he is in the boat. The *modus operandi* of the remedy is pressure on the distended right heart; and when emetics are resorted to in bronchitis which has gone on to the production of cyanosis, the good effect is due not only to the emptying of the bronchial tubes, but to unloading of the right auricle and ventricle by the act of vomiting.

Angina pectoris.—While heart disease generally of whatever kind is remarkable for the almost entire freedom from pain, so that, when patients come complaining of pain in the cardiac region, it is a presumption against the existence of any serious organic affection of the heart rather than an indication of any such change, there is one form of pain in and around the heart, angina pectoris, which is very definite and constant in its significance of disease and of danger. In a characteristic attack of angina there is intense pain in some part of the cardiac region in the left breast, or behind the sternum or across the chest, at its upper part usually, but occasionally lower down, with radiation down the left arm. Accompanying the pain is a sense of utter powerlessness and extreme fear and dread. The patient stands still, not daring to move or breathe, and feels as if he were in the act of dying; he will say afterwards that if the pain had lasted another moment he must have died. In no other condition is the physical agony of dying realised in anything like the same degree. The two elements of pain and sense of dying coexist in a true paroxysm of angina, and are almost equally characteristic. The pain differs in character and situation and in intensity in different cases. Some sufferers will say it is indescribable; nothing in their previous experience suggests even a comparison. Others speak of the pain as severe cramp in the heart, or as if the heart were gripped by an iron claw, while pain of a shooting neuralgic character, sometimes intermittent, sometimes persistent, seems to radiate from the chest to the left shoulder, the inner side of the arm, the forearm, and the ring and little fingers. Occasionally there is a sensation as of the wrist being grasped so tightly as to cause great pain.

With the pain in the heart there may be pain down both arms or shooting up into the left side of the neck, very rarely in the right arm only. Occasionally the pain may be felt first in the arm and seem to travel up to the chest, or may come in the inner side of the arm as a kind of warning of an attack. Another description of the pain is that it feels as if the sternum were being crushed back to the spine, or, again, as if the whole chest were being held in a vice. In other cases the pain is compared to a bar of iron across the upper part of the chest; in others, again, to a ton weight upon the lower part of the chest. The ramifications of the cardiac plexus and its communications with other nerves make comprehensible the radiation of pain in all the various directions enumerated, and the nerve of Wrisberg has been specially instanced as explaining the pain in the left arm; but no explanation can be given why in one case the pain is felt in one part of the cardiac region, and has some particular character and takes a given direction down one arm or both, or through to the back, while in another case the seat, character, and extension of the pain are quite different. It is not a pressure effect on the plexus outside the heart, neither heart nor aorta being necessarily enlarged, and extreme fusiform dilatation of the arch of the aorta being common without anginoid pain, and there can be no stretching or mechanical irritation of the ramifications beneath the endocardium at all comparable to that which takes place in acute dilatation of the heart. It seems to me probable that the pain is really central and that the radiation of irritation giving rise to its extension takes place in the spinal cord. An interesting point is that at the end of a paroxysm there is usually flatulent eructation from the stomach. The attacks are therefore very commonly attributed to flatulence. Distension of the stomach by food or gases may undoubtedly be, and often actually is, an exciting cause; but more frequently the sensation as of wind on the stomach is only a part of the general commotion, and is due to communicated or sympathetic irritation of the gastric distribution of the vagus, the cardiac branches of which are primarily implicated. The escape of gas from the stomach is often a signal that the paroxysm is over rather than the means of bringing it to an end. Occasionally there is a vehement necessity to pass urine, although the bladder may at the time be empty. The duration of the attacks is very varied. Sometimes it can be reckoned in seconds, most frequently, perhaps, a paroxysm will last a few minutes; but I have known a patient sit in the same position almost through an entire night, not venturing to make the slightest movement, and scarcely seeming to breathe, while the perspiration rolled off his forehead and came through his clothes. According to my experience it is when the attack comes on in the night without provocation by exertion or exposure that it is protracted. When it is started by exertion it generally ceases soon after the exertion is left off. While it would not be justifiable to say that a patient was the subject of angina pectoris unless he had had one or more paroxysms of intense radiating pain, associated with a sense of immediately impending death, it must be admitted that attacks of true angina occur which fall short of the typical development. For example, when a patient has been taught prudence by one or more bad attacks, he may, by standing still on the first warning, or by taking remedies, cut short the paroxysm, which will then have been represented only by the initial pain in the breast or arm without the mortal dread. It is possible, therefore, that before any characteristic attack has occurred, pains of a similar kind and intensity, disregarded by the patient or relieved by rubbing the chest or arm, may have the same significance as a fully developed paroxysm. Again, the patient who has had attacks of true angina may cease to suffer pain, but may have attacks of what he calls faintness, in one of which he ultimately dies. These, which have lost their title to the name angina, have an equally serious significance. The aspect of the patient is one of extreme anxiety or alarm. He is usually pale and often livid round the mouth, but it is said that sometimes the colour does not change. A cold perspiration usually bursts out on the forehead, and may be so copious as to drip off the face. The pulse, in the rare instances in which I have had the opportunity of examining it during a paroxysm, has been irregular, small, and weak. In some cases it has been reported to be very small from contraction or spasm of the arteries. In others, again, it has scarcely been affected at all.

Great importance attaches to the exciting cause of the paroxysms. In the first instance, they are almost always brought on by exertion. The patient while walking perhaps more sharply than usual, or uphill, or against a wind, is more or less suddenly arrested by pain in the chest, with a feeling as if the heart were about to stop and he to fall down dead. On standing still the pain gradually passes off, and he is able to resume his walk, but only feebly and gently. For a while the attacks only occur when provoked by exertion, but more and more easily as time goes on, and they tend to become more severe. They are more readily induced when a walk is taken, or any imprudent exertion, such as stooping, pulling open a drawer, pushing up a window, is made soon after a meal—especially after breakfast. External cold, again, predisposes to an attack; and exercise, which can be taken with impunity in mild weather, brings on a paroxysm if the air is cold and damp. Attacks, again, may be brought on by indigestion or constipation, apparently through reflex disturbance of the heart, or as a result of pressure from the distended stomach or colon carrying the diaphragm upwards and obstructing mechanically the action of the heart and the expansion of the lungs. They are also liable to occur during the night, and may be induced in various ways. The contact of cold sheets may have this effect by causing contraction of the peripheral arterioles, and thus throwing increased work on the heart. Or the upward pressure of the abdominal viscera on assuming the horizontal position may embarrass the heart. Not unfrequently an attack comes on after sleep when the vigour of the circulation has run down. It is clear that the great exciting cause is a demand for increased effort on the part of the heart, to which it is not equal, or, what is equivalent to this, interference with the movements of the heart by a dilated stomach and colon.

The conditions of the heart associated with angina pectoris are varied, but perhaps the most remarkable and significant point in the relations between heart disease and angina is that angina does not attend the chain of events through which stenosis or incompetence of the mitral valve proves fatal, and is not among the symptoms which arise out of the valve lesion and its effects upon the heart. This fact was duly emphasised by Dr. Walshe in his classical work on the heart, and no exception to it has occurred in my experience. I have, indeed, known instances in which, after attacks of angina had occurred at intervals for many months, mitral regurgitation has supervened with dilatation of the left ventricle, and concurrently with the establishment of so-called mitral symptoms—pressure in the pulmonary circulation, dilatation of the right side of the heart, and dropsy—the angina has ceased. In these particular circumstances Dr. George Balfour's view, that the giving way of the mitral valve may be an advantage to the sufferer from aortic disease, is justified. Aortic stenosis may be attended with true angina, as may also, but less frequently, aortic incompetence and a combination of the two conditions of the aortic valve. In association with aortic valvular disease angina may be met with in early adult life, and may continue for many years without proving fatal. The sense of impending death is, however, not fully pronounced in many aortic cases. Adherent pericardium appears in some cases to be a factor in the liability to anginoid attacks when it coexists with aortic valvular disease, but in my experience it has not given rise to angina when no other lesion was present. Injury to the root of the aorta has been known to give rise to angina. In aortitis there is usually angina, the attacks, at first slight, increasing in intensity and duration, and coming on more frequently as the disease advances.

A perfectly characteristic attack of angina has been described to me as having occurred in intermittent fever, and serious weakness of the heart was left behind for some time. Angina, again, has sometimes been an incident of diabetes, possibly from high arterial tension, which is commonly present in this disease late in life. Attacks of pain in the region of the heart of various kinds, some being true angina, are spoken of as gouty, sometimes no doubt in order to disguise the real nature of the paroxysms from a nervous patient, to whom the knowledge might be dangerous or fatal. In a very large proportion of the cases in which angina has proved fatal the heart has been found when examined after death to be in a more a less advanced stage of fatty degeneration. The condition of the heart during the attacks of angina has been generally supposed to be

one of spasm, but there are great difficulties in accepting this view, and probably ideas as to what is meant by spasm of the heart in the anginal paroxysm by those who have employed the term have been diverse and very often vague. If by spasm of the heart is understood tonic contraction or an unrelaxing systole, this is certainly not the condition present. The heart has never been found in this state after death, and in most cases is absolutely incapable of such contraction from the state of its walls. No pulse would be possible were the heart in a spasm of this kind, and the pulse, though small and often irregular, can usually be felt. It has, indeed, in some cases been apparently unaffected by the paroxysm. But by spasm may be meant an irregular and partial contraction like cramp in voluntary muscles, or a fibrillar contraction such as is sometimes induced by faradaic currents in muscle under experiment. The late Dr. Matthews Duncan, in the last conversation I had the honour to hold with him, suggested that the state of the heart in angina pectoris might be like hour-glass contraction of the uterus; he had probably at that time experienced the pain. Views of this kind cannot be proved to be wrong, but objections might be raised, and for my part I have to admit that I have no clear and definite idea of the state of the heart during the paroxysm. The central fact and essential significance of angina is that stress is put upon the heart, to which for the moment it is unequal. One of the main causes of such stress is persistent resistance in the peripheral circulation—or, in other words, habitual high arterial tension; and we owe to Dr. Lauder Brunton the knowledge that in many attacks of angina there is an aggravation of habitual high tension by a general contraction of the arterioles. But the habitual state of the arterial circulation may possibly be one of relaxed arterioles and capillaries and low tension, so that the heart has no abnormal resistance to overcome. Here sudden general arterial spasm would put the heart to greater stress than if the habitual tension were high, since the contrast between the work demanded would be greater.

When the paroxysms of angina can be distinctly traced to arterio-capillary resistance, or, when in the case of a patient subject to angina the usual condition of the circulation is one of high tension, the term "angina vaso-motoria" may, perhaps, be appropriately employed. It is easy to imagine that stretching of the muscular fibres of the heart in the endeavour to overcome the resistance in the arteries might cause pain. But even when the vaso-motor element is most potent another factor must enter into the causation. Nothing is more common than high arterial tension, and it is met with in an extreme degree and produces fatal results without angina by ruining heart or arteries or both in hundreds of cases for one in which angina is present. Acute dilatation of one or both ventricles, again, in which stretching of the muscular fibres is obvious, frequently occurs without angina. The importance, and even dominance, of this second factor becomes clear when the cases of advanced fatty degeneration are borne in mind, when the fibres must be incapable of producing anything like actual mechanical tension. It has been assumed that the other element is neuralgic, and in a sense this is true, but not in the sense of a predisposing neurotic tendency. It must be remembered that angina is much more common in the male, which is the least neurotic sex. Mechanical stretching and neuralgic predisposition being put out of the question, there remains the fact that the existence of the patient is threatened at the moment of the attack by arrest of the heart's action, and, where it not for the warning given by the pain and for the cessation of exertion enforced by it, the subject of the particular condition of the heart would die. We must, it seems to me, assume that angina is one of the defensive arrangements by which the adjustment of internal reactions to external conditions is secured.

The prognosis of angina is beset with uncertainty. We can never tell when the next attack will come or whether it may not be the last. We are not, however, altogether without guidance, the elements of which will be an estimate of the relative predominance of the two chief factors in the production of the attack—whether inherent weakness of the heart wall or obstruction in the circulation or other cause of embarrassment of the heart's action. While the attacks only come on when provoked by exertion or excitement or by flatulent indigestion (not of course taking the patient's word for the last-named cause), the hope may be entertained that by care in avoiding all known occasions they may be postponed indefinitely. The patient, for example, must not take exercise immediately after food, must never hurry or walk against a wind, and even on level ground must adapt his pace to his condition, and, if compelled to go uphill, must do so very gently and circumspectly. If, further, there is habitual high tension in the pulse, this is at the same time evidence of obstruction in the arterioles and capillaries, which may be capable of mitigation, and of some degree of vigour in the heart. So also will be the accentuation of the aortic second sound, and still more any recognisable impulse or apex beat. Angina, again, in connexion with aortic valvular disease may run a very protracted course. It is when the pulse is soft and the heart is normal in dimensions with imperceptible impulse and weak sounds—when, in fact, the results of careful examination are negative—that the greatest uncertainty and danger exist. The occurrence of unprovoked attacks and of nocturnal angina will emphasise this conclusion.

Treatment.—The hygienic and general treatment for angina is that which has already been described in speaking of dilatation and degeneration—which, indeed, mostly underlie the angina—and the special precautions against the provocation of attacks have been sufficiently indicated. Arsenic has long been held to exercise some influence preventive of the paroxysms, and my experience leads me to agree with this view. Phosphorus, which belongs to the same chemical and therapeutical series as arsenic, has a similar influence, which has in some instances seemed to be superior. The great means of cutting short the attack is that placed in our hands by Dr. Lauder Brunton—nitrite of amyl, or nitro-glycerine,—and a patient subject to angina should never be without one or other of these remedies. They are no doubt greatly abused, and many persons, feeling secure of obtaining relief, neglect the important precautions by which the real disease, of which angina is only a symptom, may be held in check, and so, if they escape suffering, hasten on a fatal termination.

ON THE PHYSIOLOGY OF ASPHYXIA AND ON THE ANÆSTHETIC ACTION OF PURE NITROGEN.

By GEORGE JOHNSON, M.D., F.R.S.,

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PROLOGUE.

THE following paper was read (in abstract) and discussed at a meeting of the Royal Society on Feb. 5th, 1891. In now submitting it to the readers of THE LANCET, I have interpolated a few short paragraphs and notes which are distinguished from the rest of the paper by being included within brackets. The subjects here discussed are such as should excite the interest not only of physiologists, but of all who are engaged in the practice of medicine and surgery. It is impossible to correctly interpret the character of the pulse in various morbid conditions without a clear understanding of the influence of the arterioles, both pulmonary and systemic, upon the circulation of the blood. The phenomena of asphyxia from exclusion of atmospheric air, and the results of the inhalation of pure nitrogen and other azotic gases, afford most instructive illustrations of the regulating and controlling influence of the arterioles upon the circulation. These interesting and instructive phenomena it is the main object of this communication to describe and explain, in accordance with the established facts and principles of physiology.

In a recently published Essay on Asphyxia (Apnœa) I have endeavoured to prove that those physiologists who accepted the doctrine of Alison, Reid, and Erichsen—that the immediate cause of death from what is commonly called asphyxia is the arrest of the pulmonary circulation—were right; and that the more modern doctrine, which assumes that the circulation is finally arrested in consequence of the muscular walls of the heart being paralysed by the circulation of unaerated blood through the tissues, is erroneous. Since the publication of the essay in question I have thought it desirable to obtain additional evidence in

support of the theory which I first published twenty-two years ago—viz., that the arrest of the circulation in the final stage of asphyxia (apnœa) is caused by the contraction of the muscular-walled pulmonary arterioles.[1]

I have to express my obligation to my friend Mr. Charles James Martin, M.B., B.Sc., Demonstrator of Physiology, King's College, London, for the time and labour which he has bestowed upon the skilful performance of numerous and varied experiments, the results of which will, I venture to say, throw much light upon the complex phenomena of asphyxia. It is right to mention that Mr. Martin is not responsible for my interpretation of the results of his experiments.

And here it may be well to state that all these experiments were performed on animals under the influence of anæsthetics—usually morphia, subcutaneously injected, and in some cases with the addition of chloroform—anæsthetics which, while they entirely prevented suffering on the part of the animals, did not interfere with the physiological results of the experiments. Every animal was finally killed by deprivation of air. Animals—rabbits, cats, and in a few cases dogs—were asphyxiated either by ligature of the trachea, by the paralysing influence of curare, or by causing them to inhale a gas containing no free oxygen—viz., nitrous oxide, pure nitrogen, hydrogen, and carbonic acid gas. In all these experiments reinspiration of the gases was avoided by allowing the expired gases to escape through a T-tube fixed in the trachea. During the performance of the experiments in most cases the chest and pericardium of the animals were opened, so that the relative degree of fulness of the heart's cavities might be readily observed. In all these experiments the results as regards the distension of the heart's cavities were essentially the same, no matter whether the air was simply excluded, or whether an azotic gas (i.e., a gas not in itself poisonous, yet unable to support life) was substituted for atmospheric air, the only difference being that in the case of inhalation of an azotic gas the phenomena are more rapid in their occurrence, in consequence of the more speedy displacement of oxygen from the lungs.

The principal changes in the heart's cavities were as follows:—1. Distension of the left cavities of the heart. 2. Enormous distension of the right cavities, with diminished distension of the left; the distension of the right cavities being so great that the enlarged heart actually bulged out between the split sternum of the animal; the lungs at the same time being pale, bloodless, and collapsed to an extreme degree. The circulation was apparently brought to a standstill by the inability of the right cavities to empty themselves in consequence of opposition in front.

That the arrest of the circulation could not be due to paralysis of the heart's walls by the circulation of venous blood through its tissue is, I think, conclusively proved by the following experiment amongst others.

Into the trachea of a small dog, prepared with the chest and pericardium opened, and kept alive by artificial respiration, as above described, a glass T-tube was introduced, through which pure nitrous oxide gas was passed into the lungs, whilst the expired gases escaped into the air. As usual, first the left, then the right cavities became distended, and in one minute the heart's action had nearly ceased, with over-distension of the right side. Then, without loss of time, inhalation of nitrous oxide, *impregnated with the vapour of nitrite of amyl*, was substituted for the pure N_2O, by means of a two-way stopcock, and the result was that almost immediately the distension of the right cavities began to subside, and in two minutes they had nearly regained their normal size.

It was found that after the inhalation of the nitrite of amyl the lungs had assumed a peculiar dirty yellowish tinge, and artificial respiration of air failed to restore life. It is well known that nitrites convert hæmoglobin into methæmoglobin, as a result of which the oxidation of the tissues is hindered. It appears to me that the only possible explanation of these phenomena is that the circulation having been arrested by contraction of the arterioles, was for a time restored by the paralysing influence of the nitrite of amyl upon those vessels, atmospheric air being all the time strictly excluded.[2]

Additional evidence of the influence of the arterioles in arresting the circulation during the progress of asphyxia is derived from the fact that a sufficient dose of such agents as are known to paralyse the arterioles—e.g., curare and atropine—prevents over-distension of the heart's cavities, and considerably prolongs the life of the animal.

The following experiment was performed upon a rabbit previously narcotised by morphia. The chest and pericardium being opened and the animal kept alive by artificial respiration, nitrous oxide was then substituted for air. In half a minute there was distension of the left cavities, followed in one minute by distension of the right. In one minute and a half enormous distension of the right cavities was observed, with convulsions. In two minutes and a half the heart stopped. Artificial respiration with air was now resumed. The heart immediately recommenced to beat, and its distension was removed. The heart's cavities were of the normal size and fulness in seventy seconds after the readmission of air into the lungs. Then a decigramme of curare was slowly introduced into the jugular vein, the introduction occupying five minutes. Three minutes after the completion of the curare injection inhalation of N_2O was resumed and continued. The result was that the heart continued to beat slowly and feebly, that there was no distension of its cavities, that there were occasional slow contractions ten minutes after the commencement of the N_2O inhalation, and even fifteen minutes afterwards the heart was still flickering. In this experiment the dose of curare had been sufficient to paralyse the arterioles.

Into the peritoneal cavity of a cat a decigramme of curare was injected, the animal being kept alive by artificial respiration. When the respiration was suspended, the blood pressure in the carotid immediately began to fall, and artificial respiration had to be resumed to prevent the complete arrest of the circulation by cardiac paralysis. The same phenomena occurred more than once after the respiration had been suspended. At length, after an interval of nearly an hour, suspension of respiration was followed by a rise of blood pressure in the carotid; and the heart having been exposed, there was seen to occur the usual distension, first of the left cavities, then of the right. In this experiment the excessive dose of curare had paralysed the arterioles and weakened the heart. The suspension of respiration still further weakened the heart, and caused an immediate fall of blood pressure. After a time a portion of the curare was eliminated, probably by the kidneys, a considerable amount of urine having been passed upon the operating table, and then the usual results of a moderate dose of curare were observed.

The following experiment was performed upon a cat, previously narcotised by morphia and chloroform. A dose of curare was injected, sufficient to paralyse the voluntary muscles but not the arterioles. A manometer tube, connected with the kymograph, was introduced into one carotid. Suspension of the respiration was followed by the usual rise and subsequent fall of systemic arterial pressure. The circulation having been restored by artificial respiration, sulphate of atropine was injected into the jugular vein; after which the arrest of the breathing produced no rise of pressure in the carotid, and when the sternum was split and the heart exposed, no distension of its cavities was observed.

The three experiments above described suffice to prove that the distension of the heart's cavities and the arrest of the circulation during the progress of asphyxia are the result of arterial contraction, and not of paralysis of the heart's walls by the circulation of venous blood through its tissues.

It has been suggested that the distension first of the left, then of the right side of the heart, is the result solely of *systemic* arterial contraction, the impediment acting backwards from the left side of the heart through the lungs to the right cavities and the systemic veins. One main objection to this theory is the fact, I think generally admitted, that when the chest is opened immediately after death from asphyxia, the lungs are found extremely pale, from anæmia of their minute vessels, and in a corresponding degree collapsed. Surely a backward pressure from the left side of the heart, sufficient to greatly distend the right cavities, must of necessity involve engorgement of the pulmonary capillaries. That there is a certain amount of backward pressure from the primary distension of the left side, extending as far as the *pulmonary veins*, would seem to be proved by observations made by Mr. Martin, to the effect that a manometer in a branch of a pulmonary vein indicates

[1] Med. Chir. Trans., vol. li., 1868, p. 68.

[2] [During the discussion of my paper at the Royal Society an eminent physiologist said, truly enough, that nitrite of amyl relaxes the systemic as well as the pulmonary arterioles; but that the disproportionate distension of the right cavities in this experiment was the result of contraction of the *pulmonary* arterioles can, I think, scarcely be doubted

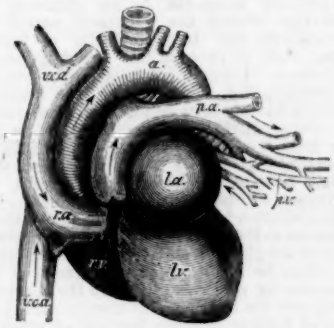
an early and continuous increase of pressure during the progress of asphyxia. But that this backward pressure does not cause the distension of the right side of the heart is shown by the fact that in the last stage of asphyxia, while the right cavities are in a state of extreme distension, the left are, as a rule, flaccid and comparatively empty, the lungs, as before mentioned, being very anæmic and collapsed to an extreme degree.

[Moreover, if the distension of the right cavities of the heart were a result of backward pressure from the left, not only would the pulmonary capillaries be engorged, but the pressure in the pulmonary veins would be greater than that in the pulmonary artery, the fact being that the venous pressure is so much less than the arterial, that it can be measured only by a water manometer.]

A most complete demonstration of the condition of the heart's cavities in the different stages of asphyxia was afforded by some experiments performed by Dr. Rutherford, now Professor of the Institutes of Medicine at the University of Edinburgh, which I had the privilege of witnessing when he was my colleague at King's College in the year 1873. The following is a brief description of Dr. Rutherford's experiments.

Into the trachea of a large dog, previously anæsthetised by chloroform, a tube was tied, and connected with a bellows for the performance of artificial respiration. The voluntary muscles were then paralysed by the injection of a moderate dose of curare, and the animal was kept alive by artificial respiration. The sternum and portions of the ribs were removed, and the pericardium was opened, so as to expose the anterior surface of the heart. One common carotid artery was divided, and a dynamometer tube connected with a mercurial kymograph was introduced into the proximal end. Artificial respiration was now suspended, and immediately the colour of the left auricle changed from crimson to purple, the dark venous blood showing through the thin walls of the auricle, while the kymograph indicated a continuous rise of pressure in the systemic arteries, the variations of arterial pressure being registered by a pen on a revolving cylinder. After the increase of pressure had continued for about a minute the *left* cavities of the heart were much distended, the auricle in particular becoming expanded into a tense globular ball with a smooth surface. (See Fig. 1.) In the next period

FIG. 1.

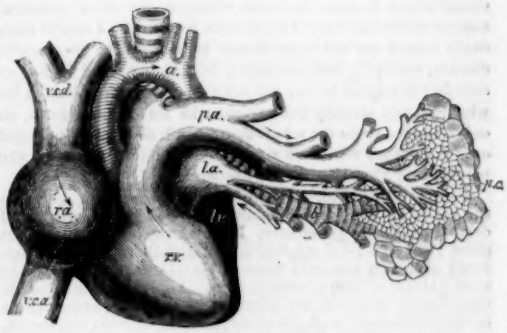


Represents the distension of the left cavities of the heart and aorta in the first stage of apnœa (asphyxia). *l.a.*, Left auricle; *l.v.*, left ventricle. Both greatly distended, the former like a smooth india-rubber ball. *a.*, Aorta distended; *p.a.*, pulmonary artery; *p.v.*, pulmonary vein; *r.a.*, right auricle; *r.v.*, right ventricle; *v.c.d.*, descending vena cava; *v.c.a.*, ascending vena cava. The right cavities of the heart, the pulmonary artery, and the systemic veins are in a state of normal fulness. The right ventricle is partly overlapped by the distended left.

the pressure in the systemic arteries began to fall, and about the same time the right cavities of the heart, which had hitherto remained of the normal size and form, became distended, while the distension of the left rapidly subsided. Meanwhile the right cavities became more and more distended, and now the *right* auricle assumed the appearance of a tense globular ball, while the left auricle had become flaccid and nearly empty. The right ventricle also became so distended that it projected above the level of the left. (See Fig. 2.) This was the condition of the heart's cavities when the animal died by the final arrest of the circulation through the lungs; but more than once, when the circulation was nearly at a standstill, artificial respiration was resumed, and then all the phenomena rapidly changed. The blood, which had accumulated in the pulmonary artery and in the right side of the heart, at once passed freely through the lungs, the distension of the right cavities subsided, and the systemic arterial pressure became first excessive, while the blood was partly venous, and then normal, when the blood became thoroughly oxygenised, and its passage through the terminal systemic arterioles was therefore no longer abnormally resisted.

[The following is the explanation of the facts revealed by Dr. Rutherford's most instructive experiment:—Artificial respiration being suspended, unaerated dark blood at first passed freely to the left side of the heart and to the systemic arteries. Arrived there, either by its direct stimulation of the muscular arterioles, or by a reflex influence through the vaso-motor nerves and centre, the muscular arterioles[3]

FIG. 2.



Represents the distension of the right cavities of the heart, of the pulmonary artery, and the large systemic veins in the final stage of apnœa (asphyxia). The letters have the same significance as in Fig. 1. In addition, *p.c.* indicates the anæmic condition of the pulmonary capillaries; *b.*, left bronchus. The right auricle and ventricle and the pulmonary artery are fully distended, the auricle having the form and smoothness of a distended ball, while the left cavities of the heart and the aorta are collapsed and nearly empty.

are excited to contract, and by this action of the vaso-constrictors the blood pressure in the arterial trunks is increased, while the left cavities of the heart become distended and dilated, as seen in Fig. 1. The circulation through the systemic arterioles is impeded and lessened, but not entirely arrested; some black blood passes through the capillaries, and this venous blood, becoming more and more entirely deoxidised, reaches the right side of the heart, and the pulmonary vessels, and coming in contact with the pulmonary arterioles, it excites in them the same contraction and resistance as had before occurred in the systemic vessels. The resistance offered by the pulmonary vaso-constrictors, while on the one hand it tends to empty the left side of the heart and to lessen the blood pressure in the systemic arteries, on the other it causes that great distension of the right cavities and of the systemic veins which is invariably found when the chest is opened immediately after death from asphyxia, and which in such experiments as Dr. Rutherford's are plainly seen to occur during the lifetime of the animal. (See Fig. 2)]. The relative amount of blood on the two sides of the heart is not an exact measure of the degree of pulmonary obstruction which has existed during the last moments of life, for the reason that the impairment of the contractile power of the left heart by anæmia and venous blood appears to vary in different cases; but I may here mention the results of the simple experiment of ligaturing the trachea of a dog which has been twice performed in my presence; the chest having been opened and the amount of blood in the two sides of the heart measured immediately after the animal had ceased to struggle.

In one dog, weighing 19¼ lb., 2 oz. of blood gushed from the distended right cavities, while 2½ drachms of blood

[3] It has been shown in Ludwig's laboratory that the arteries of an organ which has been withdrawn from all nervous influence contract when blood overloaded with carbonic acid flows through them. See Conheim's Lectures on General Pathology: New Sydenham Society's Transactions, p. 112.

flowed slowly from the comparatively empty and flaccid left side. In a dog half the size of the above, the experiment having been performed by Mr. Martin, the right auricle was found distended, the left empty; the right side of the heart contained 5½ drachms of blood, the left a quarter of a drachm.[4]

(To be continued.)

ON PEROXIDE OF HYDROGEN, OR OZONE WATER, AS A REMEDY.

CONTINUED FROM A RESEARCH COMMENCED IN THE YEAR 1858.

BY B. W. RICHARDSON, M.D., F.R.S.

(Concluded from page 709.)

FROM these references to practice based on the old observations I pass to some observations of a practical nature which have not before been recorded. I might have dealt longer on old experiences in respect to mesenteric disease, epilepsy, and anæmia; but as my mind is not so satisfied in regard to any advance in these directions, I let what I have already said remain in its original form, in order to give room for what is new. I also allow to stand over for future comment some notes on the action of the peroxide on digestion and in dyspepsia.

Use in diphtheria.—Owing to the observation made on the effect of the peroxide solution in causing separation of dead from living structures, I have several times used it since 1864 as a local application of diphtheria, in the treatment of which hitherto inscrutable disease I have had the most painful of human experiences. Applied to the throat in diphtheritic patients, the solution of peroxide, either alone or in combination with glycerine, causes, without any doubt, a rapid separation of the false membrane, and produces a favourable condition of the local surface. But here, I regret to say, the benefit—and it is a benefit—ends. On the general or constitutional conditions it has not as yet, according to present modes of using it, been efficient. It does not touch the collapse. I name this because I see that some writers, observing the good local effect in cases that have, for some other reason, recovered, have, *post hoc et propter hoc*, proclaimed the peroxide as a specific in diphtheria. It has as yet not won that position. At the same time I invariably prescribe it locally in diphtheria, not only to the throat, but as a wash for the nostrils when there is ichorous and offensive discharge. The twenty-volume solution can be applied freely to the fauces, with borax or with glycerine, and to adults it can be administered in the form of spray.

Use in intestinal cases.—The administration of the peroxide solution as an injection per anum was a line of practice that occurred to me about 1870 in a case of cancer of the rectum, accompanied with a free and very offensive discharge. The action of the solution in destroying the odour, and, combined with tannin, in limiting the discharge, was most useful. Soon after that I was summoned to a patient suffering from what I may designate as strumous caries of the sacrum, with adhesion and ulceration of the lower intestine, and copious escape of pus into the rectum. A more painful case, or one more difficult to manage, I do not remember to have seen. Here I prescribed the ten-volume solution, with tannin and dilute hydrochloric acid, by injection, with the best results. The disease proved fatal, for the whole of the sacrum was involved before the use of the oxygen solution was commenced, and after paralysis of the lower extremities had supervened. But the solution exerted such a controlling influence, and rendered the discharge so healthy, I could but regret that the treatment by it had not been brought into action at an earlier stage.

In a case of what was called chronic dysentery, with frequent motions of a fluid and offensive character, I prescribed the ten-volume solution, with tannin, in ounce doses diluted with a pint of tepid water. The injection was thrown into the bowel once daily through a long O'Beirne tube, and as the oxygen was liberated freely in the intestine soon after the injection was thrown in, the evidence was supplied of the excretion of purulent fluid, or of some excreted matter from blood. The result was very satisfactory, and led to such a rapid and sound recovery that I can recommend the repetition of the practice with the utmost confidence.

Use by inunction.—From a similar line of thought and practice I have for many years used the peroxide as an inunction for the surface of the body of patients affected with cutaneous exfoliation, as in scarlet fever and measles. In these instances the ozonic ether is used instead of the aqueous solution, because of the facility with which it mixes with the oil or lard required to make an ointment. The body is rubbed from head to foot with the ointment, the spaces between the fingers, toes, and flexures of joints being included. The application is very agreeable to the patient, and the effect in removing obnoxious odour is most marked. But the grand advantage lies in the circumstance that the process seems to remove all danger of infection from the convalescent after three or four applications.

Use in eczema.—As a general rule, oily and fatty dressings do not agree well in chronic eczema. But I once gained considerable advantage by treating a chronic eczema, which had previously and for a long time been most intractable, with an ointment of spermaceti saturated with ozonic ether. In other eczematous cases, with exudation of blood, I have employed the aqueous solution with tannin with great advantage. In cases of this nature, where there is great irritation, the solution goes well with an anodyne.

Use in diagnosis.—I have found the peroxide of hydrogen of great service in diagnosis. It diagnoses pus from mucus. In cases where I am in doubt whether matter expectorated by the lung is or is not purulent I perform the following test. I place the expectorated matter in a test-tube containing the solution. If the matter causes no evolution of oxygen, there is no purulent matter present. If the expectoration produces liberation of oxygen, the evidence of pus is strong; and if the same event occurs after all carbonic acid is removed, the presence of either pus or of some plastic element of blood or cellular tissue element may be affirmed of a certainty. In the first test-tube which I now take up there is secretion I do not suspect, and on adding to it some of the twenty-volume solution there is, as you will see, no action whatever. In the second tube there is some doubtful secretion; but again we see there is no action. The third tube holds a few minims of secretion strongly suspected to be purulent, and on addition of the solution the vehement action confirms the suspicion. In the large majority of instances it will be pus that is present, but the diagnosis extends to cellular tissue. Injected into a closed mucous cavity, like the bladder, the surface being in a healthy state, and the viscus having been emptied of urine and washed out with warm distilled water, there is no liberation of oxygen from a neutral solution of peroxide. But if there be any ulceration, by which a surface of cellular tissue is laid bare, or if there be pus present, then the escape of oxygen will be so free from two or three ounces of a ten-volume solution injected into the bladder, that the gas may be detected as it escapes from the free end of the catheter by its effect in relighting a partly extinguished taper. The same test might be applied for the diagnosis of ulcerated mucous surface, or presence of pus in the uterine cavity, and possibly also the stomach, but no opportunity has been offered me of testing in these last-named cases. I may, however, add that no more mischief could follow from the test than would follow from the injection of common water or common atmospheric air, if the solution made be chemically pure; on the contrary, the ozonic quality of the oxygen in the solution would tend to have a good effect. It might be sound practice, indeed, to sustain in some forms of ulceration a gentle continuous current of the fluid through a mucous cavity. In extensive ulceration of the bladder or uterus, accompanied with offensive discharge, this treatment offers promising results.

SUGGESTED NEW PRACTICES FROM PAST EXPERIENCES.

In the course of original research it often happens that a number of side suggestions and thoughts occur to the mind which were not dreamed of when the research commenced. In this way theory is brought out which, being an induction from experiment, may easily become practice, and that, too, of a valuable character. As a rule, it is

[4] The results of these experiments suffice to prove the error of those physiologists who maintain that the comparative emptiness of the left cavities after death from asphyxia is the result of rigor mortis.

good for the investigator not to advance theory even of this order until he himself has put it to the test. But there are exceptions to every rule, and here seems to me to be one. Some suggestions leading to important lines of practice have forced themselves on my attention, which call for proofs I can hardly hope to make in my own lifetime, but which younger men may have the opportunity of making, and which I, therefore, proceed to state without reserve; and the more readily because really in some instances the way towards practice has been opened for a considerable distance with perfect safety. Let me take as a first illustration of this kind an extension of the practice of injecting the peroxide solution into mucous canals. I have indicated, as a practical fact, that the solution can be injected into the alimentary canal, and that in more than one example it deodorised and neutralised an offensive discharge in a most effective manner.

Typhoid.—I would venture further. I would recommend the practice in the treatment of typhoid fever. In typhoid fever it would be possible to throw into the canal by this means twenty pints of ozonised oxygen per day by using only one pint of the ten-volume solution. The gas when liberated would diffuse through the whole of the canal, and would decompose and oxidise the decomposing exuded products, which by secondary absorption are the cause of the relapsing febrile seizures, with an efficiency possessed by no other remedy. It would be like exposing the decomposing ulcerated surface to ozonised sea air.

Hypodermic and subpulmonary injection.—As in physiological research I found no danger from injecting the neutral solution of the peroxide into the cellular tissue, I would venture the same on the human subject, and I fully expect that the practice will in time be largely adopted. In asphyxia, as after drowning and after suspended animation from chloroform and other narcotics, a hundred pints of oxygen might easily be transfused, hypodermically, by using the thirty-volume solution; and, with the temperature of the solution raised to blood heat, the diffusion of the gas through the cellular tissue would oxidise the blood rapidly, and tend to give a new force to the circulation. I should even go one step further in extremest cases. In sudden collapse from chloroform, if the natural respiration had actually ceased, and death seemed to have occurred, I should, to save time, whilst sustaining artificial respiration, inject the lung cavity directly on both sides of the chest with the solution. The diffusion of the gas through the lung structure would arterialise the blood remaining in the lung, and the mechanical pressure exerted within the pleura against the elastic structure would be a motor to the circulation, compressing the blood towards the left side of the heart, and producing a current of blood from the right side. For these subcutaneous and subpulmonary injections of the peroxide I have invented a new automatic syringe, which can be used without withdrawing the needle, the piston movement being sufficient for filling as well as for emptying the syringe. There would be no danger of injecting four ounces of the thirty-volume solution, rendered neutral and warmed to the normal blood temperature, into each thoracic cavity by needle puncture through an intercostal space high up in the forepart of the thorax. The water might produce a little œdema, but it would soon be picked up, and carried into the circulation by the capillary vessels. Bearing also on this subject of subpulmonary injection there is another use of the solution which has often occurred to my mind, and which would be perfectly legitimate as a practice, when the powerful action of the peroxide in destroying decomposing and purulent matter is taken into account. I suggest that in cases of cavus of the lung in phthisis, where the cavity can be clearly defined, there would be no risk of injecting the cavity, through a fine needle, with the solution, and of oxidising all the fluid that it might contain. Again, in dangerous hæmoptysis it would be most legitimate practice to inject into the pulmonary structure the oxygen solution saturated with tannin. The oxygen could do no harm, and the tannin, which would be quickly transformed into soluble glucose, would merely charge the blood with a useful saccharine food, with the advantage of making the lung, in a small degree, a kind of second stomach. Still more, it is quite worthy of serious consideration whether it would not be good practice to inject the solution in small quantities by the subpulmonary method in the early stages of phthisis. The oxygen would destroy the tuberculous exudation more quickly than any other agent, and I can see no danger of diffusing oxygen through an organ that is made for the sole purpose of receiving and condensing oxygen. The one danger would be hæmorrhage, and that could be met by combining tannin with the solution. I name this new mode of treating the lung substance "the subpulmonary." In a word, my contention is that we may learn to transfuse the peroxide solution without risk and with benefit into the lung, and indeed into any organ of the body, not excluding the brain and nervous centres themselves. The only danger that could follow would arise from delivering into the tissues so much oxygen at once that the blood would not absorb it with sufficient rapidity to allow afterwards a free course through the minute circulation.

I will show you an experiment on this point in order to illustrate what I mean. Here is a two-necked flask charged with six ounces of defibrinated blood from an ox. The blood has been deprived of all free carbonic acid by being washed with oxygen. It is of bright arterial colour, and if a current of air free of carbonic acid be driven through it into lime-water, there is no trace of carbonic acid. But when to this blood I add neutral peroxide solution, there is, even though it is already arterialised to some extent, brisk action. There is more oxidation, there is a slight elevation of temperature, and there is free escape of gaseous matter from the free tube and by the flask through the lime-water. The gaseous matter escaping consists partly of liberated oxygen, but, as shown by the precipitate in the lime-water, there is also carbonic acid; and had the blood been venous the amount of carbonic acid would have been very considerable. Thus it is clear that liberation of carbonic acid in the venous circuit from the use of peroxide may occur; and as there is no escape within the circuit for the gas or gases, there is the same danger as there would be from blowing air into a vein. I observed this fact in an experiment recorded in the last number of the *Asclepiad*, in which I restarted respiration in a lower animal, after death from chloroform, by injecting peroxide solution into the peritoneal cavity. The respiration was so good that life seemed to be returning until the vital functions were arrested from some other cause telling upon the circulation. After death it was found that the right side of the heart and large veins were filled with a bright arterialised blood richly charged with oxygen gas that had been absorbed from the large veins, and with which carbonic acid gas was also admixed. The prevention of this source of danger has to be worked out. It may be done by using a weak peroxide solution, or by using an alkaline solution. Meantime the danger ought to be known and the nature of it understood, since its existence without being understood might interfere materially with the proper application of the peroxide in its most useful and innocent administrations.

Use in tetanus and hydrophobia.—I have spoken of the effect of the peroxide in relaxing muscular contraction, and the facts I have observed in this direction lead me to suggest its use in two particular diseases of the spasmodic type, hitherto so intractable—I mean tetanus and hydrophobia. Anyone who has watched the course of one at least of these diseases (tetanus) will feel that the treatment the most of all hopeful, if it could be realised, is a means for preventing the muscular tetany, for producing free glandular elimination, and free oxidation of the septic blood. In the peroxide solution we have all these requisites, and in the next case of tetanus that comes under my care it is my intention to put the remedy to the completest trial. I shall inject the muscles in groups with the neutral ten-volume solution, heated to blood temperature, adding, if the oxygen be not alone efficient in reducing the tetanus, a weak alcoholic solution of amyl nitrite.

Mechanical use.—One other purpose for the peroxide must be named—a purpose purely mechanical, and yet not to be slighted. In the process of being liberated from its solution the gas exerts an expansion, which in many instances may prove of great service. In this mechanical mode of application it could be used in obstruction of the bowels from intestinal involution. It could be used for causing distension of the bladder when the sound was being employed, and perhaps in stricture for producing dilatation of the passage posteriorly to the stricture. In the same manner it could be brought into play for dilating the uterine cavity; while for bringing on premature labour, in instances of contracted pelvis, the effect of the equal distension by the gas liberated

from three or four ounces of the ten-volume solution would, I suspect, be as rapid as it would be safe and effective.

NEW PHARMACOLOGICAL RESEARCH.

Let me describe in the last part of this essay some pharmacological outlines. Peroxide of hydrogen is still made, as Thénard first made it, by the action of an aqueous acid solution on peroxide of barium, the number of volumes in each specimen turning on the number of precipitations. I originally proposed a ten-volume solution for medical purposes, and that has been well adhered to; but for special purposes a solution of twenty and even thirty volumes may be employed. In order to keep the oxygen in the solution it is necessary to have it slightly acidified, either by dilute nitric, hydrochloric, or phosphoric acid; and, for my part, I prefer the dilute phosphoric acid. In this form the solution can be administered internally in doses varying from a fluid drachm to a fluid ounce; but two or four drachms, diluted in ten fluid ounces of water, may be considered an average dose. The taste is peculiar, being identical with that of ozone when inhaled by the mouth, and not at all dissimilar to the taste of chlorine in a weak solution. For injection purposes the solution should be rendered neutral by the cautious addition to it of caustic soda or potassa. The soda I think is the best; but it should not be neutralised until the time it is wanted. In ten volumes it may be injected either into the cavities or into the cellular tissue without being further diluted. The solution of the peroxide is incompatible with many substances; but it is compatible with the following: the mineral acids, tannin, alcohol, glycerine, alcoholic solutions of the alkaloids, and alcohol combined either with ether, amyl hydrate, amyl nitrite, or iso-butyl.

ADMINISTRATION BY INHALATION.

The oxygen from the peroxide can also be administered by inhalation by means of a simple apparatus which I have constructed for general use, and in working which I have taken advantage of another oxygenated body that liberates the oxygen and at the same time yields up a portion of its own oxygen. Into a glass vessel having two necks, like the ordinary Wolff's bottle, a few ounces of the peroxide solution are placed. A tube from a funnel, the tube having a stopcock, runs through the stopper of the bottle to the bottom of the contained solution. From the second neck of the bottle there springs another tube for inhalation, at the free end of which is a double-valved mouthpiece, like the oldest and best of the chloroform inhalers. The apparatus is now ready for use. When it is wanted the funnel is charged with a solution of permanganate of potassa in the proportion of ten grains of the permanganate to a fluid ounce of water. The tap is then turned, the permanganate solution flows into the peroxide solution, and, immediately, oxygen derived from both bodies is briskly evolved. This, if necessary, can be caught in a flexible balloon, or bag, from which it can be inhaled in measured doses, but this is not a requisite. Should the practitioner desire to combine the oxygen with ether, or with any other volatile body, soluble in ether but not in water, he can allow the ether, or ethereal solution, to float on the top of the peroxide solution. Then, as the oxygen escapes, the ether, or the ether with its other volatile comrade, passes over in combination with the oxygen. A patient can help himself to a dose at any time, as may be directed, by merely adding a measured quantity of the permanganate solution. Nitrite of amyl can be inhaled in this manner with ether, and, in short, there is here a means of administering most of the active volatile medicaments by inhalation, and in a form most ready for combination with the blood, as it passes in its course over the pulmonic circuit. How easily the apparatus can be brought into use will be seen by the demonstration here made. Under the form of ozonic ether the administration can be carried out either as a medicine to be taken in water, or as spirit solution by the mouth, in doses of half a fluid drachm to two fluid drachms, or as fine spray from the Siegle steam inhaler. For a styptic and deodorant spray for the throat the following form is useful: alcohol, pure (sp. gr. 830), half a fluid ounce; tannin, pure, twenty grains. Dissolve the tannin in the alcohol with an ounce of distilled water, and then add solution of peroxide of hydrogen (ten-volume strength) to six fluid ounces. To make a solution for spray. Of this solution, one or two fluid drachms can be used with Siegle's steam spray inhaler, a mode especially applicable in cases of throat affection. When the peroxide spray is brought into use for the throat, it is good practice, in some instances, to make the spray the means of administration, in small doses, of medicinal agents which may act internally. Quinine may be administered in this manner, and also soluble preparations of opium, and many other substances that are soluble in alcohol, and are, at the same time, compatible with the oxygen solution.

SPRAY FOR THE SICK ROOM.

Reference was made in the first part of this paper to ozonic or sea spray for the sick room—a solution diffused in the air as spray from a spray producer. The solution is composed of the solution of peroxide of hydrogen (ten-volume strength), ten ounces; common salt, two drachms. If a pleasant and pine-tree odour be desired, a few drops of ethereal tincture of Kaurie gum can be added, and the effect can easily be produced. In sick rooms and in the wards of hospitals such sprays could be arranged to work automatically so as to deliver and diffuse the solution at regular intervals. For this purpose Messrs. Krohne and Sesemann have constructed for me an apparatus which will distribute spray for several hours at a time.

OTHER MODES OF APPLICATION.

The peroxide solution can be prescribed as a gargle, antiseptic and astringent. A good form for this purpose is: Tannin, pure, ten grains; glycerine, pure, one ounce; distilled water, four fluid ounces; diluted hydrochloric acid, ten minims; solution of peroxide of hydrogen, sufficient for eight fluid ounces. To make an eight ounce gargle. An evaporating lotion can be made with the peroxide in the following form: Alcohol, pure (sp. gr. 830), two fluid ounces; anhydrous ether, one fluid ounce; distilled water, four fluid ounces; solution of peroxide of hydrogen (of neutral reaction and ten-volume strength), to twelve fluid ounces. To make a twelve fluid ounce lotion.

Another simple yet useful preparation of the peroxide is as the unguent, for inunction over the surface of the skin after scarlet fever, and other affections where there is free shedding of dead cuticle. The unguent is made by rubbing up ozonic ether with spermaceti ointment, so as to form a thin paste, which may, if desired, be rendered thick by the addition of a little more spermaceti, or thin by addition of olive oil.

ADMINISTRATION BY INJECTION: AN AUTOMATIC INJECTION SYRINGE.

In order to inject the peroxide solution into the cavities or beneath the skin, I have invented a syringe which I call the "automatic syringe," and which Messrs. Krohne and Sesemann have very neatly constructed. It is, as will be seen, a small graduated instrument, having a feeding-tube for charging it on one side, and an exit tube for discharging it on the other side. The syringe is automatic in the sense that when both tubes are in place the mere act of working its piston up and down fills it and empties it. The quantities of fluid received and delivered by it vary from ten minims to four fluid drachms, and at the end of the exit tube it can be fitted with injecting needles of different sizes or with a nozzle, according to requirement. With this syringe the peroxide solution can be injected through a needle subcutaneously, as into a carbuncle or into deeper structures. By attaching the delivery end to an enema tube it can be used also for the intestinal injection, and by attaching the same end to a catheter, it can be employed for injecting the bladder. The advantage in every case is that the current can be kept up when once it is started, either for a small or large injection, and that the admission of air is impossible. The syringe might be used without any complication for the transfusion of blood and for aspiration, as well as for transfusion; but it has been specially adapted for the oxygen solution.

CONCLUSION.

In closing these pharmacological notes it is well to recall the important fact that the remedy we have had before us has about it the peculiarity that it is a purely natural remedy, that it is not toxic, and that with the exception of the danger of producing by it gaseous accumulation in the blood, under some circumstances of its use—a danger which admits of being avoided—it is free of all risk. In its remedial application, too, there is no complexity as to its *modus operandi*. In every instance that which it effects is oxidation. For asphyxia it is oxidation; for spasm it is oxidation; for breaking up pus and exudations it is oxidation;

for destroying infectious and fetid organic secretions, or excretions, it is oxidation; for producing eliminative action it is oxidation.

At the close of the paper on Peroxide of Hydrogen, read before the Medical Society of London in 1860, I said:—"Sir, in placing this memoir on the annals of the Society I guard myself, once and for all, from any exaggerated suggestions as to the value of this new medicinal agent. The subject is so novel, even to me after many months' learning and knowledge of it, I have feared to use a sentence that has not been measured and recast over and over again. I am not offering this medicine as an *elixir vitæ*. I do not pretend to know all its properties. I do not bind myself, irrevocably, to that which, at the present meeting, has been offered; on the contrary, I remain open to all new observation and knowledge for correction and guidance I believe we have here within our grasp a powerful medicine, the full value of which it may take years to develop, and the useful application of which may be developed in directions different from those now advanced. My purpose will be served if I call forth investigation and elicit fact, let the course of the events bend as they may."

A generation has passed since these words, Sir, were spoken, and twenty-nine Presidents have filled the place you occupy to-night. But to you and my fellow-students I re-echo these words; and although I have spoken with more knowledge, experience, and confidence in a remedy which forms the most active and preponderating element of the healthy living body, I wish still to express the same earnest hopes with the same candour and the same respectful confidence in the voice of the future.

OBSERVATIONS ON ADDITIONAL CASES ILLUSTRATING HEPATIC SURGERY.[1]

BY J. KNOWSLEY THORNTON, M.C.,
PRESIDENT OF THE MEDICAL SOCIETY.

IN November, 1887, and again in December, 1888, I had the honour to read before the Medical Society papers containing my experience up to date in hepatic surgery. On March 2nd, 1891, I communicated to the same Society my further experience in this very important branch of abdominal surgery. The work is so comparatively new, and so interesting both to the physician and surgeon, and the individual cases differ so much in detail, that I venture, as in my previous papers, to record them a little more fully than I should do if dealing with some of the commoner operations performed on abdominal organs. I will take, first, nine cases in which I diagnosed gall-stones as the cause of illness, and in seven I found and removed them, with complete cure of the patients. In the eighth case I missed the stone, the patient died, and the stone and much effused bile were found in the peritoneum after death. In the fifth case the obstruction proved to be hydatids, and they were successfully removed. I will, then, refer more briefly to seven other cases, which have a more or less important bearing upon the diagnosis of pathological conditions of the liver.

CASE 1.—A young lady of thirty-two, much crippled with chronic rheumatic arthritis, had lived in early life on marshy land in Roumania. There had been several illnesses, occurring at intervals during several years, which had been diagnosed as due to gall-stones. From the description given by the patient, and from the marked renal and bladder symptoms which accompanied the attacks, I was very doubtful whether they were gall-stone or right renal colics, and when I came to examine the abdomen I was still more inclined to think the illness renal, for there was a rounded tender swelling projecting from under the false ribs on the right side in front, and giving an impulse right back into the loin; and though there was some crepitus over the usual site of the gall-bladder, there was no swelling there and no very marked tenderness. On Feb. 28th, 1889, Mr. Murray gave chloroform, and, assisted by Mr. Malcolm and in the presence of Mr. Heath, I made a small incision over the swelling, but rather to its inner side, in case it should turn out to be the gall-bladder, and found it was that organ completely enclosed in matted omentum and intestines; having aspirated and drawn off a little bile-stained mucus, I packed it carefully round with carbolised sponges, and opened it by a small vertical incision, and extracted two large stones with my sponge forceps and some débris with a lithotomy scoop. The adhesions made the examination of the right kidney very difficult, but it was certainly large and hard, and I greatly feared she might have renal trouble as well. I sutured the edges of the gall-bladder into the abdominal incision in the usual way and drained it, and she made a perfect recovery, all discharge ceasing on the fifteenth day. She has been in much better health in every way since the operation, and the kidney has given no further trouble; so I hope the renal symptoms were due to its adhesion to the inflamed mass formed by gall-bladder, intestines, &c. She has recently had a slight attack of pain, but I think from the description it was merely an ordinary "bilious attack."

CASE 2.—Hospital patient, single, thirty-seven. Operation, March 16th, 1889. Symptoms for a year, two severe attacks of colic. After the second she was seen by Dr. Goodhart, who diagnosed gall-stones. She had never been jaundiced, but the stools had been pale ever since the first attack. Usual incision; healthy gall-bladder, with no adhesions; two good-sized stones in common duct. After aspirating and opening the gall-bladder, I found it impossible to dilate the cystic duct, which had closed behind the stones. I therefore needled them into pieces by passing a fine needle through the wall of the duct, and then further crushed the fragments with a pair of nasal polypus forceps, the blades being protected by red rubber tubing drawn over them. The gall-bladder had been so much injured in the attempts at dilatation that I decided to remove it. The liver was large and congested, and much in the way, and I found the operation much more difficult than in the case described to the Society in my last communication. After the operation she was distinctly jaundiced, and for eight or nine days there was a good deal of bile in the urine, but the first motion passed was brown, and the fragments of stone began to pass on the eleventh day. She made a good recovery, and went home well in a month.

CASE 3.—Single lady aged forty. Attacks of pain and indigestion every three or four months for the last six years. For the last two years pain has been much more severe and prolonged in the region of the gall-bladder, with eructations, sense of constriction round the chest, nausea and vomiting. On March 24th, 1889, very severe attack; jaundice on 29th. April 24th, very severe pain for three days. June 2nd, succession of four attacks of severe pain, jaundice persisting since it first appeared. I saw her in consultation with Mr. Propert, and found her deeply jaundiced; small, quick pulse; temperature over 102°; great pain over the common duct. I diagnosed stone impacted in the common duct, and, looking to her very serious condition, urged immediate operation, and operated the same afternoon, Mr. Murray giving chloroform, Mr. Malcolm assisting, and Mr. Propert being present. I removed a large angular stone from the cystic duct after breaking it up, and found another impacted in the common duct just below the entrance of the cystic duct. Failing either to reach it through the cystic duct or to break it up, as in the last case, I incised the common duct, and needled the stone into fragments, which, however, I was unable to extract through any reasonable opening in the duct wall. I therefore left most of the fragments in the duct, carefully suturing the opening over them. I then sewed the edges of the open gall-bladder into the external wound, and drained it in the usual way, passing a glass tube also into the peritoneal pouch below the liver. The highest temperature after the operation was 100·2°, pulse 72, and after this normal. All discharge ceased on the sixteenth day, and she was up on the nineteenth; all jaundice gone and urine and fæces normal, and she rapidly recovered perfect health.

CASE 4.—Married lady aged thirty-five, mother of five children. Lump just below liver and pain noticed six years ago, just after birth of last child. Several attacks of pain after this; no jaundice. Came to me in July, 1889, during attack; the last previous attack had occurred a year before. I could distinctly feel a number of stones in the gall-bladder, and advised their removal. Operation July 31st, 1889. A simple cholecystotomy, gall-bladder sewn into abdominal incision and drained; bile-stained mucus discharged very freely at first; entirely ceased in a fortnight. Temperature once rose to 101°; was normal on the seventh day. Excellent recovery, and remains well.

CASE 5.—Hospital patient, single woman, aged thirty-two, sent to me by Dr. Jack of Emperor's Gate, was seized with

[1] A paper communicated to the Medical Society, March 2nd, 1891.

sudden severe pain in the region of the gall-bladder during sleep, in May, 1889. The pain continued all next day, recurring in severe paroxysms: two days later she was jaundiced and the urine was yellow. This attack entirely passed off with a simple purge. On Oct. 11th a similar attack, in which she was attended by Dr. Jack, who found a tumour in the region of the gall-bladder and sent her to me, having first aspirated the tumour and drawn off two pints of bile-stained fluid. The tumour refilled rapidly. On Nov. 11th, 1889, I cut down upon the tumour and having removed two pints and a half of bilious fluid with the aspirator, opened it and removed a quantity of hydatids, and found that it was the gall-bladder. There were many adhesions all round it, and I removed a separate hydatid cyst from the omentum. As there was fluid in the pelvis I made a counter opening over the pubes and drained the peritoneum through it by a glass tube. The gall-bladder was sutured into the abdominal wound and drained. The temperature rose to 102° on the first two evenings, but was normal on the fifth day. The pelvic tube was removed in thirty-six hours. The gall-bladder discharged for twenty-two days. Perfect recovery.

CASE 6.—Married woman, aged forty-three, mother of twelve children, youngest four, was sent to me in same month as above by Dr. Maurice of Marlborough. She was much emaciated and deeply jaundiced, with that peculiar earthy bluish tinge which so often accompanies malignant disease. Indefinite swelling and dulness in region of gall-bladder, but more to left than usual. Liver large and hard, and obvious matting of parts below it; no ascites. First attack nine months before. Severe pain, which continued off and on for two weeks; did not notice her stools or urine. At end of two weeks violent vomiting, complete anorexia, and green jaundice. On admission, colour as above, tongue clean and moist, fair pulse, small hard glands in both groins, pelvic organs normal. I diagnosed impacted gall-stone and advised operation, but could not help being a little anxious, lest it should prove to be associated with malignant disease. I operated on Nov. 28th, 1889, in presence of Dr. Maurice, Sir Spencer Wells, and many other visitors. I found the liver so large that the gall-bladder and ducts were quite covered, much adhesion of omentum and intestines, a large oval stone impacted in common duct, and, failing to define the gall bladder accurately, and feeling sure that it would be impossible to get at the stone through a contracted cystic duct, I decided to incise the common duct at once and so remove it. I was much hampered by the large liver, and had to work entirely by touch deep in the abdomen, guiding the knife on the left index finger. The first incision was followed by such a rush of dark venous blood that I feared for the vena cava, but, having introduced a small Ferguson's glass speculum, I saw that it proceeded from a vein in the adherent omentum, and this I easily secured. I had great difficulty in loosening the stone, which was firmly adherent to the lining membrane of the duct over a great part of its surface. After removing it I could see the termination of the duct in the duodenum quite distinctly through the speculum. I closed the opening in the duct by six fine interrupted points of silk suture, and a continuous one over all, using the omentum to strengthen the closure as I had done in the previous case of duct incision. I drained the peritoneum by a glass tube. She suffered very seriously from shock, and the first urine was half albumen; there was none before the operation. She quickly rallied, however. The temperature never rose above 100·6°, with a pulse of 100, and both were normal on the fifth day. All drainage was over on the sixth day; there was a natural action of the bowels on the fifth day; the urine began to improve in colour on the third day, but the stools were clay-coloured till the eighth day. The wound was healed in a fortnight, and she left the hospital in three weeks quite well, but still slightly jaundiced. Dr. Williamson of Ludgershall writes that the jaundice lasted about five weeks after her return home, that she has grown stout, and is quite well and able to do all her house work.

CASE 7 was that of a single lady aged thirty-six, whom I saw in consultation with my friend Mr. Hewer at Highbury. The patient had long suffered from inactive liver, with sallow complexion, and attacks of pain in the right hypochondrium, suggesting the presence of gall-stones. For the last six months the attacks had clearly been due to attempted passage of gall-stones; the pain became very violent, and was accompanied by vomiting, jaundice, and rapid emaciation. Sir Andrew Clark, and afterwards Dr. George Harley, saw her, and the latter made a prolonged attempt to massage the stones into the intestine, but without effecting any amelioration of the symptoms. When I saw her with Mr. Hewer she was deeply jaundiced, with raised temperature and quick pulse, and we agreed that if relief was to be given there was no time to lose, and I operated on the next day, May 3rd, 1889. I found two stones impacted one above the other in the common duct. The gall-bladder was so shrunken that it was difficult to recognise it, and I at once decided to open the common duct, remove the stones, and suture the opening. This procedure I carried out with much difficulty, owing to the matting of parts by adhesions; and not being very well satisfied with the security of the suturing of the duct, I passed a rubber tube into the pouch, at the bottom of which it lay, and brought it out through the upper part of the abdominal incision, and I also passed a glass tube into the pouch of Douglas through a counter opening above the pubes. The latter was hardly required, but a very heavy discharge of bile-stained serum flowed from the rubber tube for many days after the operation, showing that my fears as to the security of the duct sutures were well founded. She recovered rapidly, without a single bad symptom, and Mr. Hewer reports on Feb. 13th, 1891: "Perfectly well, good complexion, and takes her food without any inconvenience."

CASE 8 was that of a young married woman aged thirty-four. She had suffered for a long time with attacks of pain round the back and in neighbourhood of liver, which lasted a few days, and then entirely passed off. In January of last year she noticed a lump in the situation of the gall-bladder which varied in size. In February she had a severe attack of pain, with tympanites and severe vomiting. The lump was said at this time to be irregular in outline, and so mobile that it was thought to be in the omentum, and of a malignant nature. This diagnosis was strengthened by gradual emaciation with constant pain, and by her mother having died of internal cancer. When I first saw her I found a smooth oval tumour about as large as a turkey's egg, and with all the characters of a distended gall-bladder. She went away for a time, and when I saw her again I found a much smaller, harder, and more sensitive swelling, and this confirmed my diagnosis; but I feared it might be a case of malignant obstruction rather than stone. I operated on May 20th, 1890, and found a very hard and thickened gall-bladder, and laid it open and hunted carefully, but could find no stone. The adhesions round it were so firm that it was difficult properly to explore the ducts from their peritoneal surface, and the thick wall of the gall-bladder cut so easily with the sutures that I determined not to attempt to fasten it into the incision, but to suture it carefully and drop it in, this, as it proved, most unfortunate decision being aided by the unusually small amount of bile or mucus which escaped from the bladder during the necessary manipulations of the operation. The patient did badly from the first, and died on the third day with septic symptoms. An examination after death showed that a large quantity of bilious fluid had escaped into the peritoneum through the giving way of the sutures in the gall-bladder wall, and close to the opening lay a small gall-stone free in the peritoneal cavity—a remarkably small one to have caused so much trouble and such great thickening of the gall-bladder; but no other disease could be found to account for the mischief.

(To be concluded.)

ON ADDISON'S DISEASE.

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(Concluded from page 713.)

THE discolouration of the skin in Addison's disease has been the subject of much investigation. Various explanations have been offered as to the constitution, source, and mode of deposition of the pigment. The two principal views are: (1) That the pigment is a proteid substance which undergoes colour changes within the rete cells in which it is found; (2) that it is an hæmatogenous product, and is transferred to the cells pre-formed. It will be convenient

to discuss together the questions relating to the constitution and the source of the pigment. The chemical composition of other pathological pigments has been appealed two with a view of obtaining a clue. A point specially aimed at has been to ascertain whether iron is present or not. If present it affords presumptive proof that the pigment is derived from blood-colouring matter. Berdez and Nencki[1] found that the pigment of a melanotic tumour contained no iron, but a considerable amount of sulphur. An analogous pigment is that of the choroid, which, according to Sieber,[2] contains neither iron nor sulphur. Berdez and Nencki, founding their opinion on the results of their analysis, hold that melanotic pigments are in no way related to the colouring matter of blood. The absence of iron and the presence of sulphur contradict the assumption of any derivation of melanine from hæmatin, which contains iron but not sulphur. Mörner[3] attributes the absence of iron in the results obtained by Berdez and Nencki to the mode of research, as he found that melanotic pigment is nearly half as rich in iron as is hæmoglobin. He regards the pigment as a derivative of hæmoglobin, and declines to accept a decomposition product of hæmoglobin—hæmatin—as representing blood colouring matter. Klebs[4] holds that the presence of sulphur in melanine proves that it is not derived from hæmoglobin but from the decomposition of some sulphur containing albuminoid, remarking that to this class of substances hæmoglobin, being sulphur free, does not belong. This applies to hæmatin but not to hæmoglobin. Hæmoglobin contains sulphur, but hæmatin does not. Schmidt[5] regards pathological pigments which do not contain iron as simply two states of a colouring matter derived from hæmoglobin. In the early stage iron is present, later on it is absent. In some instances portions of the pigment afford evidence of the presence of iron, whilst other portions do not, the difference being due to the relative age of the respective deposits.

With so much diversity of both results and opinions as to the composition of morbid pigments, it may seem useless to try to determine the presence or absence of iron in the pigment of Addison's disease as a means of tracing its derivation. If the result is negative, it is true that no inference can be drawn, as a pigment undoubtedly derived from hæmoglobin may contain no iron. On the other hand, if iron is found, the assumption of the pigment being a product of hæmoglobin receives material corroboration. Perls,[6] Nothnagel, and other observers failed to obtain any reaction with the Prussian-blue test when applied to sections of pigmented skin from Addison's disease. I made a series of experiments in this direction with potassium ferrocyanide, potassium sulphocyanide, ammonium sulphide, and sodium salicylate, the result in all cases being negative. To sections of the skin a few drops of a 3 per cent. solution of potassium ferrocyanide or sulphocyanide were added, and then a drop of hydrochloric acid. With ammonium sulphide the sections were simply covered with a drop or two of the reagent in various dilutions. In some instances a drop of glycerine was added after the reagents, and the section covered with thin glass and allowed to stand for several hours. No colour change in the pigmented cells was produced even after prolonged exposure. As remarked by Nothnagel,[7] these negative results by no means prove the absence of iron, as the metal may be present in some combination which the reagents will not touch. If iron is present in the pigment, it is probably in some form which cannot be unlocked except by destruction of the organic elements of the combination. Incineration would free the iron, but there are practical difficulties in the way of direct demonstration by this process. After trying many methods with sections of the skin to liberate any iron present in the pigment, so as to enable it to yield colour reactions *in situ*, all of which were unsuccessful, I adopted the following procedure. The pigment from a portion of skin from the scrotum (as being most deeply pigmented) was carefully scraped away and transferred to a test tube and well washed with water, and subsequently with alcohol acidulated with hydrochloric acid, in which it was allowed to remain for some hours with frequent agitation. The mass containing the pigment was then dried, weighed, placed on a slip of clean platinum foil, and cautiously incinerated. The residue was treated with two drops of 10 per cent. hydrochloric acid in water, and one drop of a 3 per cent. solution of potassium ferrocyanide. Two short pieces of glass tube were previously prepared by grinding their ends flat, and cementing on to the one of each a circle of thin microscopic cover-glass. The tubes were coated on the outside with lampblack, so that the whole layer of any contained fluid should be traversed by the rays of light directed through them. The tubes were clamped vertically side by side, and a piece of white paper was placed below them at such an angle as to reflect the light through the tubes to the eye. The mixed fluid obtained from the pigmented skin was transferred to one tube, and to the other the fluid obtained from an equal-sized piece of normal (non-pigmented) skin treated in precisely the same way, the washed product when dry corresponding in weight with that yielded by the pigmented skin. In order that the quantities of the reagents should always be equal, the same solutions and the same pipettes respectively were used throughout the experiments. A number of experiments were made in precisely the same way, the result in all cases being the same. There was no perceptible difference in depth of colour between the solutions obtained from the pigmented and from the non-pigmented skin. The colour was always a light blue, and was due to a minute quantity of iron diffused in the cell walls and cement substance that was scraped away. The cells containing pigment were no richer in iron than those which were free from pigment. Some of these experiments were made with potassium sulphocyanide in the place of the ferrocyanide. The result was the same except for the difference in colour of the reaction; the depth of colour was equal in the fluids from pigmented and from non-pigmented skin. Zaleski[8] found minute quantities of iron in various tissues after careful removal of all traces of hæmoglobin. The iron probably exists in more than one combination. As a simple albuminate of the oxide (judging from the behaviour of the artificially prepared albuminate) it would be separated by acidulated alcohol, which is not the case. The result of these experiments tends to support the view that the pigment deposited in the skin of patients suffering from Addison's disease does not contain iron. After what has been already said it is superfluous to observe that it by no means follows that the pigment is not of hæmatogenous origin. Spectrum analysis also yielded negative information. The pigmented layers of several sections of skin were arranged in apposition on a microscope slide, and then examined with the micro-spectroscope. A high-power objective was used, so that all the light received by the spectroscope should pass through the pigmented cells. Not the least trace of an absorption band could be detected. The violet end of the spectrum was damped, without any decided cutting-off. This corresponds with the spectroscopic observations made on solutions of the pigment from melanotic tumours by Berdez and Nencki, and by Mörner.

Chemical evidence as to the source of the pigment being negative, the subject has to be discussed from other standpoints. In favour of the hæmatogenous hypothesis, it is to be observed that there is good reason for believing, broadly speaking, that all pigments, normal and pathological, of the human body are derivatives of hæmoglobin. This statement, however, is by no means universally accepted, and moreover it proves nothing; but convincing evidence to the contrary is required before it can be rejected in any special instance of pigmentation. It is accepted on all sides that the pigment in Addision's disease is deposited in the lowest layers of the rete Malpighii, precisely where normal pigment is found—for example, in the dark-skinned races, and in those parts of the body in whites where pigment abounds, as the areolæ of the nipples in women and the scrotum in men. Further, the deposit of pigment seen in some cases of phthisis, and in puerperal women, occupies the same anatomical site. As Nothnagel puts it: it is impossible to distinguish microscopically between sections of the skin in Addison's disease and those derived from a negro; if there is any difference it is solely in degree. This resemblance applies not only to the site but to the colour and character of the pigment. Recklinghausen[9] lays great stress on the reddish-brown and gold-yellow tint of the pigment granules, as indications of hæmatogenous origin. Further evidence

[1] Archiv für Experiment. Path., Bd. xx.
[2] Ibid. [3] Zeitsch. f. Physiol. Chemie, Bd. ix.
[4] Die Allgemeine Pathologie, 1880.
[5] Virchow's Arch., Bd. cxv. [6] Ibid., Bd. xxxix.
[7] Zeitsch. f. Klin. Med., 1885.
[8] Virchow's Arch., Bd. civ.
[9] Handbuch der Allgemeine Pathol., 1883.

of hæmatogenous origin is afforded by the observation of Riehl[10] in the transport of pigment from the blood to the hair, by cells which carry the pigment from the bloodvessels through the corium to the hair. Kölliker[11] explains the mode of physiological pigmentation in exactly the same way, and is of opinion that it differs in no respect from pigmentation of pathological causation. It has been urged against the hæmatogenous derivation of the pigment in Addison's disease that the part where the pigment is deposited is removed from the immediate neighbourhood of bloodvessels, and consequently cut off from them as a source of supply. The explanation just given removes this difficulty. Pigment cells have been found attached to the sheath of the bloodvessels in the corium, and others on their way to the epithelial layer surrounding the papillæ. When they reach the lowest cells of the epiderm they yield up to them their pigment. According to Ehrmann,[12] the basal cells of the epiderm send short, thin pigment-carrying processes into the corium, which play an important *rôle* in the transport of the pigment. These finger-like processes act as bridges between the lower cells of the rete Malpighii and the corium, and along them the pigment is propelled as fine granules into the protoplasm of the lower rete cells. Under physiological conditions in the more pigmented parts—as, for example, the skin of the scrotum—the corium is found to contain pigment-carrying cells. By far the greatest amount of pigment exists in the rete cells, because its presence in the corium is only transitory; it is being continuously passed on to the rete cells, where it is stored up. In physiologically deeply pigmented parts the supply is so abundant that a considerable amount is always to be met with in transit. This was beautifully illustrated in a specimen of skin taken from my second case. Some weeks before the patient died a mustard-plaster was applied to the surface of the abdomen. The skin underlying the plaster remained permanently more deeply pigmented than the surrounding skin. At the necropsy a small piece of the skin of the abdomen was removed, so as to include some that showed the pigmentation solely due to the disease and some in which it was intensified by the counter irritant. On microscopic examination it was seen that not only did the lower layer of the rete cells, corresponding to the more deeply pigmented part, contain a larger amount of pigment than those of the neighbouring skin, but that in the underlying corium, below as well as in the papillæ, were a large number of carrier cells charged with pigment. In the corium of the surrounding skin there was a marked difference—the carrier cells were sparsely scattered.

The oft-repeated observation that the pigment in the rete cells is almost entirely limited to the lowest layers, the upper cells of the epiderm being free, suggests the inquiry as to what becomes of it. Ehrmann[13] states that it is rubbed off with the epiderm as it reaches the surface. In the sections of the skin from the cases I examined there was a layer of cells free from pigment, of considerable thickness, above the cells which contained pigment, and consequently the latter could not be rubbed off without causing an abrasion. The squamous cells which are shed in the ordinary course of events contained no pigment. In very deeply pigmented skin the pigmented layer is much thicker, and may extend to the surface, as is the case with negros, in whom the pigment may be parted with, as described by Ehrmann. In the skin from my cases it appeared as though the pigment cells of the rete lost colour as they passed up further from the papillæ. This would indicate fading of the pigment, the hue being maintained in the lowest layer of the rete cells by a continuous supply from the corium. The loss of pigment either by fading or by rubbing off from the surface explains the variations in colour frequently observed in cases of Addison's disease. At times the patient appears darker, at times lighter. If the supply equals the loss the colour remains unchanged—if it is more, the colour is deepened; if less, it is diminished. In the case of the mustard-plaster alluded to, an increased activity was occasioned in the transference of pigment from the bloodvessels to the rete cells, which remained in force long after application of the stimulus. As time went on, however, there were indications of diminution. The more deeply pigmented patch, which at first was very distinct both in hue and outline from the surrounding skin, lost some of its colour, and the margin its sharp contour. There was an evident tendency to return to the general condition.

It is a striking fact that mucous membrane is not pigmented in Addison's disease. With the exceptions about to be mentioned, there is an entire absence of pigmentation of both mucous and serous membranes, as well as of the internal organs throughout the body. The exceptions appear to be limited to those portions of mucous membrane where localised inflammatory processes have taken place, and to those which have been subjected to intermittent pressure, or to friction—chiefly the buccal mucous membrane along the meeting line of the teeth, within the lips, and on the tongue. In several cases small spots of pigmentation have been observed on the peritoneum; my second case presented this peculiarity. In one of the cases recorded by Greenhow, small tubercular granules were scattered over the mesentery and peritoneum, and around each was a deposit of black pigment. In my second case the posterior vaginal wall was pigmented at the upper part, evidently due to pressure produced by an elongated cervix uteri. It appears that the same condition—local hyperæmia—which determines pigmentation in mucous membrane intensifies it in the skin. When mucous membrane is pigmented the discolouration is not so pronounced as it is in the skin. On microscopic examination a notable difference is seen in the position of the pigment; instead of being deposited in the lower layer of the rete cells, it is found in cells within the papillæ of the corium, the cells of the rete being free. This distribution of the pigment in mucous membrane has been noticed by Greenhow,[14] Hadden,[15] Kahlden,[16] and others. The cells in the papillæ have all the appearance of carrier cells. They are irregularly grouped so that some of the papillæ are free from pigment, others contain one or two cells, and others again are filled with them. To this sparing and irregular distribution of the pigment, together with the fact that it is below instead of in the epiderm, the lighter shade of pigmented mucous membrane as compared with the skin is due. In Addison's disease it will be seen that mucous membrane presents three characteristics in reference to pigmentation which distinguish it from skin: it does not undergo general pigmentation; certain local conditions are necessary to develop it; the pigment occupies a different histological site. As regards the second characteristic, it is to be noted that the pigmentation is strictly limited to the areas acted on by the local conditions. In the portions of mucous membrane that are the seat of pigmentation the same process takes place, up to a certain stage, as in the skin. The carrier cells charged with pigment make their way from the vessels through the corium towards the rete. Here the resemblance ceases; for instead of the pigment being transferred to the lower rete cells and stored up in them, it remains in the carrier cells within the papillæ. I noticed that when, exceptionally, any of the pigment did find its way beyond the limit of the corium, it was not deposited within the cells of the rete, as is distinctly the case with the skin, but was diffused in minute granules amongst the rete cells in such a way as to obscure their outline. In the rete of the skin the pigment granules are mostly within the cells, and help to differentiate their contour. Sometimes the pigment granules which penetrate the lower rete layer of mucous membrane run in between the cells, and appear as fine dotted lines. It is evident from all this that the cells of the rete Malphighii of mucous membrane are incapable of receiving the pigment, hence its retention in the carrier cells of the corium. It is probable that the rete cells of mucous membrane are devoid of the finger-like processes described by Ehrmann, which bridge over the space between them and the carrier cells in the corium. This behaviour of mucous membrane towards pigment strengthens the carrier cell hypothesis. By showing the process of pigmentation transport in an incomplete stage, it demonstrates that in pigmented skin the pigment is not formed within the rete cells from colourless albuminoid material or chromogen, but that it is conveyed to them preformed. The argument is corroborated by the analogy which exists between the pigmentation of mucous membrane and two pathological conditions affecting the skin. In leucoderma and in the tufts of white hair prematurely formed in some individuals the papillæ of the underlying corium are as abundantly supplied with pigment carrier cells as is the rest of the skin, but in consequence of the absence of means of com-

[10] Vierteljahrschr. f. Dermatologie, 1884.
[11] Zeitschr. f. Wissensch. Zoologie, 1887.
[12] Vierteljahrschr. f. Dermatologie, 1885–6. [13] Loc. cit.
[14] Loc. cit. [15] Path. Trans., vol. xxxvi. [16] Loc. cit.

munication between the rete cells and the pigment cells—the finger-like processes of the former—no pigment is transferred. This absence of receiving filaments is the pathological condition which constitutes the cause of the abnormality in pigmentation in the cases cited; in mucous membrane it is probably a normal histological condition. From the observations I have made in the pigmented mucous membrane of Addison's disease, it appears that exceptionally some of the pigment granules find their way from the carrier cells of the corium into the rete, not, however, into the cells, but between them. The pigment cells of the corium are not capable of retaining their pigment for an indefinite time—they are vehicles, not stores,—and it is probable, when the pigment is not removed from them in the usual way, that the granules after a time escape from the cells and are carried with the lymph into the rete, where they are distributed around the cells.

It has been assumed that light is the agent by which the depth in tint of skin pigmentation is increased. The fact that the exposed parts of the body—the face, neck, and hands—are usually of a deeper hue than the parts which are covered by the clothing is regarded as proof of this statement. I am disposed to think that light does not increase the pigmentation by virtue of its actinic powers, but that in conjunction with the air, and with heat—from the sun and from artificial sources—it increases the amount of blood in the parts acted on, and in this way develops greater pigmentation. My reasons for thinking so are that portions of skin which are subjected to friction—the shoulders of men from the rubbing and pressure of the braces, and the waist in women from the pressure and friction of the bands of their underclothing—have often been found in cases of Addison's disease to be more deeply pigmented than the neighbouring skin. The deeper hue of the skin produced by a mustard plaster, and the deposit of pigment in mucous membrane being limited to those places where either mechanical or pathological irritation has been set up all point to local hyperæmia as the cause of increased pigmentation.

As to the condition in which the colouring matter exists when received from the bloodvessels by the carrier cells there is room for doubt. Whether the blood discs pass through the walls of the vessels and are directly received by the carrier cells clinging to them, or only the hæmoglobin transudes, is not known. In either case it is remarkable how soon the hæmoglobin loses its iron. The activity of cells in splitting up proximate constituents may possibly account for it. Nothnagel[17] strongly insists that the pigmentation in Addison's disease is entirely due to nerve influence affecting not so much the receiving cells of the corium as the bloodvessels of the skin. He denies that the pigmentation is due to any primary alteration in the blood itself. The hypothesis of nerve influence being the cause of skin pigmentation accounts more rationally for its occurrence under various conditions, physiological and pathological, than does the presence of effete or abnormal colouring matter in the blood. It is conceivable that the necessary nerve influence may be occasioned in a variety of ways from central and from peripheral causes. Addison's disease and some other systemic diseases—phthisis and malignant disease, for example—are so many conditions which may cause permanent skin-pigmentation by acting on some segment of the central nervous system. The word "central" is here used in a relative sense, as apposed to peripheral. Temporary pigmentation from central causation is illustrated by that which frequently accompanies pregnancy. Peripheral stimulation causes pigmentation of the skin when the surface is exposed for some time the action of powerful sunlight, especially if accompanied by the presence of saline particles in the air as from sea breezes. These conditions have a mode of action in common, and do not require special morbid processes to suit each case. The presence of effete or of abnormal colouring matter in the blood requires a much more complicated hypothesis in order to embrace all forms of skin pigmentation. It is much simpler to suppose that undue stimulation of the skin nerves by the powerful rays of the sun determines a change in the relation between the walls of the bloodvessels of the skin and the adhering pigment cells, which results in excessive abstraction of pigment from normal blood, than that the blood itself is altered to furnish the pigment.

[17] Loc. cit.

Two additional points in my second case merit attention. The external genital organs resembled those of a young child, the uterus was of the infantile type, and the ovaries were very small. Kleinwachter[18] relates the case of a woman twenty-nine years of age, who died from Addison's disease, whose generative organs presented the following appearances. The mons veneris was devoid of fat and hair, the labia were flaccid, and the uterus, ovaries, and mammæ atrophic. The patient had not menstruated for nine months. The effects of deranged nutrition on special organs is well illustrated by these cases; in the one there was retarded, or rather arrested, development, and in the other the atrophic changes resembling those of advanced old age. It is to be remembered that general wasting does not take place to any great extent in uncomplicated Addison's disease, the inference therefore is that the trophic nerves of the organs named are liable to share in the abdominal nerve changes. The uterine vaso-motor nerves are in close relation with the splanchnic, whence the abnormal influence is probably derived. The second point is that the patient's breath for the last two or three days of her life gave off a peculiar odour which has been described as "ethereal." Nothnagel[19] observed a similar odour in one of his cases of Addison's disease in which von Jaksch found marked acetonuria. The temperature in my patient was subnormal previous to the occurrence of the odour, but afterwards the breath and the surface of the body felt exceptionally cold to the hand. The respiration was slow but not of the sighing type observed in diabetic coma; the patient was exhausted to the verge of dissolution but was not comatose. The urine did not contain sugar, nor did it give any reaction with ferric chloride, or with sodium nitro-prusside and ammonia. About 90 cc. of the blood obtained at the necropsy were placed in a flask connected with a condenser leading to a closed receiver surrounded with ice. The flask was placed on a water bath at about 60° C. After a time the receiver was changed, and the temperature was increased to 100° C. In neither case was any product obtained which responded to the tests for acetone, or the substance which gives the so-called acetone reactions. I am disposed to refer the "ethereal" odour in my case to some aromatic product, probably of the phenol group, derived from the splitting up of the proteids of the tissues. It was about the period of the occurrence of this odour, as recorded in the history of the case, that there was for the first time a marked increase in the amount of indican in the urine. Some of the urine at this period was acidulated with sulphuric acid and distilled. The distillate yielded a much more abundant precipitate with bromine water than the distillate from an equal amount of normal urine. The quantity of urine at my disposal was too small to admit of a reliable quantitative estimation of the phenol from the amount of tribromo-phenol formed, and the death of the patient prevented further investigations. It is known that under many pathological conditions aromatic products are found in the urine greatly in excess of the amount met with in the urine of healthy individuals. For the most part they arise from putrefactive changes in the contents of the intestines, and in the course of certain putrefactive diseases. Exceptionally they may be formed from the tissues of the organism itself by abnormal metabolism apparently apart from the influence of micro-organisms. It is not uncommon for aromatic products to replace each other in the urine from time to time in the progress of a disease. Phenol and indoxyl have been observed to alternate, and also to be present in excess at the same time. Indoxyl may be replaced by acetone, or a substance giving the acetone reaction. I should be disposed to regard the products encountered in my case as evidences of auto-intoxication, presumably referable to abnormal tissue change the result of perverted or perhaps of arrested trophic influence. Increase in the amount of indican in the urine of patients suffering from Addison's disease has been observed by Rosenstern[20] to the extent of 64·5 milligrammes of indigo in one case, and 75·3 milligrammes in another (being eleven or twelve times greater than the normal amount), and also by other observers. The increase here spoken of occurred during the progress of the disease; it was not limited, as in my case, to a short period immediately preceding death. As far as the evidence of my two cases goes, the excretion

[18] Deutsche Med. Zeitung, 1889.
[19] Loc. cit. [20] Virchow's Arch., Bd. lvi.

of excess of indoxyl and of ether-sulphonates has no direct relation to Addison's disease *per se*. The instance in which it occurred can only be regarded as one of far-advanced disordered metabolism, such as may determine the formation of like derivatives towards the end of any disease in which the tissues are profoundly affected.

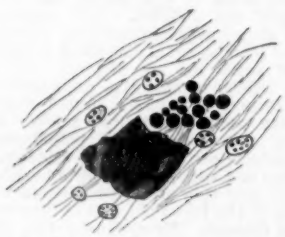
Manchester.

DR. RUSSELL'S CHARACTERISTIC MICRO-ORGANISM OF CANCER.

BY GEORGE DEAN, A.M., M.B., C.M.

IN an address read before the Pathological Society of London on Dec. 2nd, 1890, and published in the medical journals of Dec. 13th, Dr. William Russell of Edinburgh described what he called a "Characteristic Organism of Cancer." Since that time I have had the opportunity, in the Pathological Institute, Berlin, through the kindness of Professor Virchow and his assistants, of carrying out some control observations on this subject. At the outset a number of cases of cancer were examined by the methods described by Dr. Russell. In these the fuchsin bodies could be found, being in some cases numerous, in others rare. Some of the appearances described by Dr. Russell were not observed—e.g., the appearance of a row of two or three bodies united by rods. It was also found that the most characteristic groups of bodies always occurred in the connective tissue, in capillaries, or in lymph spaces. The difficulty referred to by Dr. Russell was encountered—viz., that in certain cases the nuclei and nucleoli of the cells gave the same colour. Sometimes this was found to be a local change occurring over small areas. This in itself was sufficient to excite suspicion as to the organismal character of the fuchsin bodies, pointing rather to the action of some chemical agent affecting the cells, or to a degeneration due to some change of nutrition. In some instances the bodies were very closely associated with irregularly shaped masses of hyaline-like substance, giving the same colour—red by Dr. Russell's, purple by Gram's—and glossy appearance as the fuchsin bodies. In Fig. 1, from a case of carcinoma of the liver,

FIG. 1.



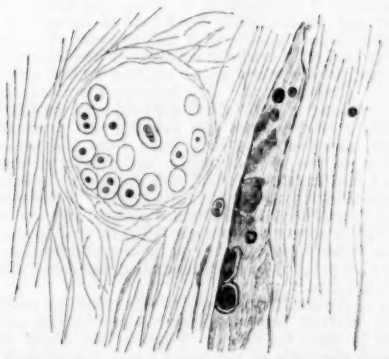
From a case of carcinoma of the liver, secondary to carcinoma of the mamma. (Zeiss, $\frac{1}{12}$, oil immersion, oc. No. 2.)

secondary to carcinoma of the mamma, stained by Gram's method, such an appearance is presented, and the nucleoli in the neighbourhood are also shown to have taken on the colour.

In other cases the bodies were found in intimate relation with hyaline degeneration occurring in and around blood-vessels. In Fig. 2, from a case of ovarian carcinoma, this appearance is seen. Inside the wall of the vessel masses of hyaline substance are to be seen, and among these are one or two bodies very similar in appearance to the fuchsin bodies. In the connective tissue around the vessel some of the bodies are to be seen, and in the alveolus, near the vessel, the altered nuclei of the cells give the red colour and glossy appearance of the bodies, and are practically indistinguishable from them.

These appearances seem to indicate that the bodies are really due to a degeneration, and of the degenerations "hyaline" degeneration is remarkable in giving the same colour with eosin and fuchsin in acid solutions, and in its tendency to form spherical bodies. The term "hyaline" is used in its widest sense, and with the view that the appearance may originate from a number of different sources—e.g., from blood plasma, blood plates, blood corpuscles, epithelium.[1] The position in which the fuchsin bodies occur points in some instances to a post-mortem change taking place in the blood under conditions of which at present we are ignorant. That the bodies are due to the action of reagents I think cannot be entertained; for I believe they can be seen in fresh sections, though here it is much more difficult to be certain one is looking at the same thing. In a fresh section the bodies may be seen lying in characteristic groups, resembling fatty globules, but with the contour not so dark as in the case of fat. A section containing such a group of bodies was treated with acid and afterwards with alcohol and ether, and after this treatment the bodies still retained their characteristics, thus excluding calcareous and fatty deposits. From the same tissue beautiful specimens of the fuchsin bodies were afterwards obtained. The exact nature of these bodies is a question about which it is possible for much discussion

FIG. 2.



Vessel showing hyaline thrombus, with transition to the uchsin bodies. In the neighbouring alveolus the altered nuclei are stained red. (Zeiss, $\frac{1}{12}$, oil immersion, oc. No. 2.)

to arise. A much more important question, however, and fortunately one much easier to decide, is whether these bodies occur in cancer only. For if they are found in other pathological or in normal tissues, with any degree of frequency, it is impossible to hold that they have anything to do with the etiology of cancer. A number of other pathological and also of normal tissues was therefore examined by the same methods. The results certainly do not tend to establish the appearance as one peculiar to cancer. From a comparatively small number of tissues the fuchsin bodies were found in six separate cases. Two were typical cases of uterine myoma without a suspicion of cancer. In a case of syphilis of the lungs the bodies were found in the connective tissue around the bronchial glands. The fourth was a case of phthisis. The other two cases were normal tissues. The one was a case of non-lactating mamma from a woman who had borne children; the other was from a lactating mamma.

The conclusions, therefore, to which this paper leads are: 1. That the bodies are not to be regarded as micro-organisms. 2. Even admitting that they were of vegetable origin, they cannot be regarded as pathogenic—i.e., they cannot be regarded as a "characteristic micro-organism of cancer."

[1] Ziegler's Pathology, vol. i., p. 118.

NORTH LONDON HOSPITAL FOR CONSUMPTION.—The annual report of this charity states that £2000, out of £6000 required, had been collected for the purpose of erecting a central block to the hospital, which will afford room for thirty extra patients. Dr. J. Edward Squire was deputed to go to Berlin to study Professor Koch's system for the treatment of tuberculosis. The result of the inoculation of several patients with the fluid was satisfactory. The in- and out-patients for the year were 396 and 2840 respectively. The cash statement shows a balance in hand of £274.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

A CASE OF A BROKEN CATHETER IN A MALE BLADDER AT SEVENTY YEARS OF AGE, ILLUSTRATING THE VALUE OF INTERNAL URETHROTOMY.

By G. BUCKSTON BROWNE.

THE operation of internal urethrotomy is not yet fully accepted by many surgeons whose opinion is worthy of respect; indeed, it is only two years ago that at one of the most important gatherings of the medical profession a well-known surgeon of many years' experience publicly stated that in the whole course of his experience he had never known a case where this operation was called for. The operation, however, is so useful and important a one, that when very striking illustrations of its advantages occur they should be published, in order that those who have found fault with the procedure may reconsider their decision. It may also be mentioned as an interesting fact that those surgeons most prone to entertain the newest proposals in the way of stricture treatment have been obliged publicly to confess that for all practical purposes internal urethrotomy is the best mode of treating tough undilatable strictures.

The following case illustrates a condition of things in which internal urethrotomy was of the greatest service possible, and where no other means, save an operation of magnitude, could have relieved the patient.

General B——, seventy years of age, had long suffered from urethral stricture. This had induced some vesical debility, and he was in the habit every day of introducing into the bladder a small gum elastic catheter, in order to draw the residual urine, which on the average amounted to three ounces. The stricture was situated three inches from the external meatus, and admitted, but very closely, a No. 4 catheter. One day in August last he introduced the catheter as usual, but on withdrawing it found he had left about an inch of it in the bladder. He was naturally alarmed, and sought advice, but was assured that if he waited the catheter would decay, and come away in pieces naturally. But as time went on the patient became uncomfortable, and he experienced great irritability of the bladder and pain on sitting down. I first saw him on October 30th, when he had all the symptoms of stone in the bladder. I sounded him with a small sound, and felt what was practically a stone in the bladder. A week after he was anæsthetised, and an attempt to dilate the stricture was made, but in vain. Nothing larger than No. 6 would pass. Internal urethrotomy was therefore at once resorted to; the stricture was incised by means of Civiale's urethrotome, and immediately a No. 14 sound (English scale) passed with ease into the bladder. A lithotrite was now introduced, and the offending body seized and lightly crushed; it was seized and released again and again, care being taken every time it was seized to nip it only lightly. By these manœuvres the stony crust was effectually removed from the foreign body, and it was considered ready for evacuation. It was therefore again seized and drawn into the neck of the bladder, where it was felt to meet with a resistance, and was evidently held crossways between the jaws of the lithotrite. The body was therefore seized again, and this time it came through the neck of the bladder, without trouble, between the jaws of the lithotrite. Upon inspection it proved to be more than an inch of a black gum catheter, evidently once entirely coated with calculous matter, but now almost entirely denuded of its phosphatic covering. By means of a lithotrity tube and aspirator all the calculous deposit was evacuated from the bladder. The patient made a good recovery, and now, five months after the operation, his urethra easily admits a No. 14 sound, and it is important to note that the bladder has regained its contractility, and empties itself completely by its own efforts. This case could not be managed by dilatation; the prolonged and trying treatment by electrolysis was entirely out of the question, and either the supra-pubic or a perineal cystotomy would have exposed the life of such a patient to very serious risk. On the other hand, treated by internal urethrotomy, the patient had no pain, lost no blood, and was out of bed and about in ten days.

Wimpole-street, W.

CASE OF CHLORAL POISONING.

By JOHN L. WELCH, M.A., M.B., C.M. EDIN.,
DISTRICT SURGEON, SELANGOR, STRAITS SETTLEMENTS.

THE following case appears interesting on account of the size of the dose administered, the violence of the symptoms, and the presence at the same time of malarial fever.

On March 17th at 8 A.M., I was called from the pauper hospital to my house, to see the wife of the Chinese cook, who had been taken suddenly ill, and was now "as if dead." During the previous day it appeared the woman had been suffering from an attack of ordinary jungle fever, and had asked my "boy" to get her a dose of salts. Under the impression that it contained salts, he had administered a dose of chloral hydrate from a bottle which he found in my midwifery bag. As nearly as I could judge, 360 grains had been abstracted from the bottle, which before had been nearly full. A few minutes after the drug had been given the patient complained of giddiness. She wandered a little in talk and then fell down insensible. When I first saw her, about twenty minutes after the administration of the drug, the patient was lying deeply comatose, face flushed, conjunctivæ injected, pupils contracted and insensible; respiration about thirty to the minute, quick and shallow, box of larynx moving with every respiration; pulse 152, and very weak; reflex absent from conjunctiva and patellar tendon. I passed an ordinary syphon stomach-tube, and washed out the stomach four times. The fluid at first evacuated was strongly fragrant of the drug. On the fourth washing the odour could not be detected. Before the tube was removed half a glass of pure whisky was thrown into the stomach as a cardiac stimulant pending the arrival of other means of treatment.—8.25: Pulse could hardly be counted. Epiglottis began to fall back on the larynx. This was seized in a pair of forceps and kept forward. A hypodermic injection of five minims of liquor strychniæ was thrown into the biceps, and mustard poultices were applied to the chest and the calves of the legs.—8.45: Pulse could not be counted. Respiration 25, gasping, with occasional pauses. Strong ammonia applied to nostrils without effect.—9: Pulse could not be felt at wrist; breathing shallower; cheeks blown out on expiration. A pint of very strong hot coffee with half an ounce of sal volatile were injected into the rectum, and shampooing commenced over arms and legs.—9.20: Pulse still imperceptible. Respiration stopped twice, but was restored by the application of hot water to the chest. Injected five minims of liquor strychniæ as before, and continued massage to the arms and legs.—10.30: Pulse could be detected at wrist. Shampooing continued. Hot and cold water applied alternately to precordial region.—11: Pulse counted at heart about 160. Temperature taken for the first time 98·8° F. in axilla.—2 P.M.: Pulse 145; much stronger; respiration fairly full, 22 per minute. Face congested; conjunctivæ injected, but sensible to touch; pupils still contracted. Gave a large cupful of strong coffee.—6: Temperature in axilla 100·3°; pulse 98. Patient wandering and delirious.—9: Patient still under the effects of the drug. Pupils contracted; temperature 101°. When disturbed she raves slightly. At 6 A.M. on the following morning the patient was very weak and giddy, sweating profusely, slightly wandering at times; pupils normal. I gave her eight grains of sulphate of quinine and half an ounce of sulphate of magnesia. She fell asleep, and woke in about five hours, refreshed and perfectly sensible. Conjunctivæ still injected. Although every other symptom of chloral poisoning was present in a marked degree, there was never any fall of temperature. This seems to have been due to the occurrence of an attack of intermittent fever, which was itself delayed for about two hours.

Selangor, Straits Settlements.

HYDATID OF UTERUS; LAPAROTOMY RECOVERY.

By A. A. ALTORMYAN, M.D.

A FEMALE, aged thirty-five, was married at the age of fifteen. Seven years afterwards she bore a child. Five years ago she married a second time, and soon after noticed a

swelling in the left iliac region, about the size of a small orange. It grew slowly, but continually, without causing pain or discomfort. Menstruation was regular, both before and after the appearance of the swelling. She was first examined by me in September, 1890, when I found a tumour of round contour, the size of a head, with apparently soft contents; it was pretty freely movable, and perfectly dull on percussion. Digital examination per rectum and vagina revealed nothing abnormal. Bimanual examination did not show any intimate connexion with the uterus. I diagnosed ovarian tumour, and advised operation. The patient did not return till Jan. 10th, when I found the tumour twice as large as in September; it was painful, had lost mobility, and taken a more central position. The patient had lost strength, and had developed the "facies ovarian." She consented to operation, and laparotomy was performed. On incision, peritoneal adhesions of the tumour to the parietal wall were found, which were easily separated. The trocar was introduced, and a light straw-coloured fluid ran out. The pedicle was found to originate in the substance of the uterus; it was treated extra-peritoneally, after passing an elastic ligature round it. On examining the tumour it was found that the thick investing capsule was driven out of the fundus of the uterus, just above the attachment of the left Fallopian tube. Within this uterine capsule was found a thick, laminated, homogeneous elastic membrane, the "ectocyst" displaying a peculiar tremulous motion; within this was a thinner delicate membrane, the "endocyst," within which were found about a dozen walnut- and filbert-sized cysts, with a few granular particles. Under the microscope pieces of the cysts showed the characteristic laminated homogeneous strata: free hooks and new buds from the germinal membrane. There was no fever, and the patient made a rapid recovery.

Aleppo, North Syria.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum propriias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Procemium.

ST. MARY'S HOSPITAL.

EXCISION OF THE THYROID FOR MALIGNANT DISEASE; RECOVERY; REMARKS.

(Under the care of Mr. PEPPER)

THIS case presents several features which render it of unusual importance and interest. It is not often that malignant disease of the thyroid is submitted to surgical treatment in the early stage before local signs of malignancy are such as to render complete removal very uncertain. There were difficulty in swallowing and recent enlargement in size, but no marked fixity or irregularity of outline, no enlargement of the lymphatic glands, or evidence of secondary growth. The proof of the malignancy was afforded by the microscopical examination. Removal of the whole of the thyroid gland is an operation of considerable magnitude, and has hitherto been attended by considerable mortality in this country, the amount of which cannot be ascertained. The performance of the operation in two stages in this case undoubtedly diminished the risk of a fatal result by lessening the shock and hæmorrhage. Mr. Butlin[1] gives it as his opinion that "at present the number of instances in which a cure of the disease (malignant of the thyroid) can be claimed is so small that the operation is scarcely justified." Dr. Rotter[2] gives an account of fifty cases of operation for cancer of the thyroid. Eight of these died within twenty-four hours of the operation, five at the end of the first week, and eight at the end of the second week. Only four remained free from recurrence at the end of six months, but one of them continued well for at least four years after the operation. The operation in this patient comes more under the heading of that for removal of hypertrophied thyroids; for although malignant disease was present, the removal of the two parts of the gland presented few of the difficulties usually met with in the excision of malignant growths of this part. The operator is justified in anticipating a cure of the disease. It will be noted that in this, as in most recorded cases of cancer of the thyroid, the patient was the subject of long-standing enlargement of the gland.

G. E——, a married man, aged fifty, by occupation a blacksmith, was admitted on March 26th, 1890, with an enlarged thyroid. He is a native of Buckinghamshire, where he has lived all his life, and he has always been strong and well. One of his daughters died at the age of sixteen from cystic bronchocele, which had been treated by injection. His tumour was first noticed about ten years ago. He was then told that it was enlarged glands, and it was painted with iodine. It, however, slowly continued to increase in size, causing little discomfort. About three months previous to admission he had an attack of influenza, and since then the tumour has grown much more rapidly. For a similar period he has been unable to swallow solid food.

Condition on admission.—The man is strong and well nourished. His intellect is not impaired, and there is no myxœdema. There is a huge lobulated tumour in the front of the neck. It is larger on the right than the left side, and extends upwards behind the angle of the jaw on either side, downwards as low as the sternum and clavicles, and backwards to the level of the ears. The tumour moves with the trachea on swallowing, and the lobes on either side of the

neck are connected by a central enlargement passing over the front of the windpipe. All the lobes are lobulated, simulating enlarged lymphatic glands, and somewhat elastic; the right is rather tender. The neck measures 20½ in. round the most prominent portion of the tumour, and the right lobe is 9 in. broad and 7 in. long. The voice is impaired, and there is difficulty in swallowing anything except liquids. When he lies on his left side there is stertorous breathing, owing to pressure of the growth on the trachea. He complains of radiating pains in the neck, giving rise to headache. Urine: sp. gr. 1022, faintly acid, no albumen. As the symptoms were not urgent he was given arsenic. Three weeks later the tumour was apparently increasing in size, so it was decided to remove it, the right lobe first.

On April 18th, the neck having been shaved and rendered aseptic, the man was anæsthetized (chloroform) and a longitudinal incision, about five inches in length, made in the middle line of the neck. The tissues were divided until the gland was reached, and, as it was thought impossible to remove the right lobe through the existing wound, a further incision was made about three inches in length, starting from the upper extremity of the first incision and in a direction parallel to the ramus of the jaw on the right side. This flap of skin, with platysma, fascia, &c., was dissected from the gland, and turned out-

[1] Operative Treatment of Malignant Disease, p. 204.
[2] Arch. für Clin. Chir., Bd. xxxi., 1885.

wards. The sterno-hyoid muscle was pulled over to the left, but the sterno-thyroid and omohyoid, which were thinned out over the tumour, were divided, and the right lobe fully exposed. It was then slowly dissected out in its capsule, bleeding vessels being ligatured as they were divided. The chief difficulty in the removal of the tumour lay in the number and immense size of the bloodvessels supplying the gland. Of these the superior thyroid artery and vein—the latter being quite the size of the finger, and the former proportionately large—the middle thyroid vein, and the inferior thyroid vessels were the largest, and were all ligatured in two places, and divided between the ligatures. After they had been divided, and the gland freed of all its connexions except the enlarged isthmus, this structure was also ligatured and divided, and the right lobe then removed. A huge cavity remained, bounded posteriorly by the carotid sheath throughout its whole length, while below the pleura could be seen rising with each inspiration. The larynx and trachea were flattened out and twisted over to the right side. The wound was washed out with boracic acid lotion and its edges brought into accurate apposition by sutures of silkworm gut, a drainage-tube inserted, and a dressing of iodoform gauze and absorbent wool applied. The operation lasted nearly three hours. There was very little hæmorrhage considering the magnitude of the operation, and the amount of shock was small.

On April 19th the temperature was 100° F., and on the 20th 101°, but it was never above normal afterwards. The wound healed by first intention, and the cavity had entirely closed on the seventh day after the operation, when he was allowed to get up for the first time. He went home a week later, with instructions to return in three weeks' time, it having been thought, from the microscopy of the portion removed, that there was evidence of malignancy.

He returned again on May 27th. He had been in capital health since the previous operation, and had had little if any difficulty in swallowing, even solid food, or of breathing. On May 31st the left half was removed in precisely the same manner as the right half had already been dealt with. On this side, however, the superior thyroid vessels were much smaller and the inferior larger. The recurrent laryngeal nerve was seen underneath the tumour and avoided. The wound was treated in the same way as before. On June 6th all the sutures were removed, and on the 7th the drainage-tube, which had been shortened half an inch daily. The man went home on June 14th quite recovered, the circumference of the neck being then fourteen inches and a half.

Pathology.—Section of the right lobe showed it to be an ordinary bronchocele, with colloid degeneration; there were, however, two masses, each the size of a walnut, which showed a different structure. They were rounded, distinctly marked off from the neighbouring tissue, soft, and more highly vascular. In one a small cyst was found. Microscopically, they showed an alveolar stricture, the fibrous tissue bounding the spaces being small in amount, with numerous bloodvessels. The smaller alveoli were filled with small cubical cells, whilst the larger showed colloid degeneration in the centre, with similar cells around. These masses were evidently of a carcinomatous nature. The left lobe was similar to the right in structure, but showed no evidence of malignant change.

Remarks by Mr. PEPPER.—This is an interesting example of a tumour remaining stationary or only increasing slowly in size for many years, and then suddenly taking on a more active growth, as the result of its undergoing malignant change, which is the more likely if the patient has reached adult life. The rapid increase in size and the pressure effects rendered operative interference necessary. The larger lobe of the tumour was first removed in the hope that the symptoms would disappear, and that the enlargement would prove to be due to simple hypertrophy; but microscopical examination showing its malignant nature, it was resolved to complete the extirpation. Although total excision of the thyroid for simple hypertrophy may not be defensible (save for relief from pressure) on account of the possible development of myxœdema, there can be no doubt that in cases of malignant disease the more immediate danger from the nature of the growth renders the operation advisable. At the present time the patient is in excellent health, and no signs of myxœdema have appeared. As the areas of malignant growth were circumscribed, and the lymphatic glands free from infection, there are grounds for hope of immunity from recurrence. For the clinical notes of the case I am indebted to Mr. KNOX, house-surgeon, and for the pathological report and photograph from which the drawing was made to Mr. Crowle, surgical registrar to the hospital.

LONGFORD INFIRMARY.

THREE CASES OF ABDOMINAL SECTION; RECOVERY.

(Under the care of Dr. MAYNE.)

WE publish below the notes of three cases of successful operation on the abdomen for conditions of varying character: in one the patient suffered from tubercular peritonitis; in another the peritonitis was secondary to an ovarian tumour; and in a third there were many and firm adhesions remaining from a peritonitis, the result of tapping a cyst some time before. Of these, the effect of the operation in the case of the patient suffering from tubercle of the peritoneum is the most interesting. We have already drawn attention to the fact that this condition has often simulated ovarian tumour, and many operations have been undertaken for the relief of patients supposed to have been suffering from the latter when the symptoms were caused by tubercle. The evidence as to the value of operative treatment in tubercle of the peritoneum is so very conclusive of improvement (if not of cure) in the majority of patients submitted to it, that it is not possible to agree with the unfavourable opinion of Spaeth.[1] König gave at the recent congress at Berlin a series of 131 cases in which operation had been done for tubercular peritonitis; of these, no less than 107 were left in a satisfactory condition when they were last reported, 84 were said to be quite cured, and 30 were well two years after the operation. We would refer our readers to our remarks on cases of this nature, and their treatment, as exemplified by patients under the care of Mr. Keetley.[2]

CASE 1.—E. H——, aged twenty, was admitted on March 3rd, 1889, suffering from an attack of tubercular peritonitis, which commenced several weeks before. The abdomen was greatly enlarged and distended with fluid, very painful, and on the left side between the ribs and the crest of the ilium, and about five inches in breadth, there was dulness, which might have been mistaken for a tumour; but careful examination left no doubt of its being caused by disease of the peritoneum. Her features were pinched, and there was a well-marked hectic flush. Severe diarrhœa and night sweats were very troublesome and distressing to her. Temperature 103·2°; pulse 140, very weak. She was ordered daily eight ounces of port wine, egg-flip, beef-tea, jelly, milk and lime-water; for medicine she had quinine, pepsine, and bismuth, and when necessary hypodermic injections of atropine and morphine in combination; applied over the abdomen cod-liver oil and belladonna. This treatment was continued for some days, but without any satisfactory result, the temperature varying from 103° to 104·2° during the time. The patient having been told that an operation would afford her the only chance of recovery, she replied, "I came to hospital believing I must die and place myself entirely in your hands." On the 13th, having been put under the influence of chloroform, an incision about five inches long in the usual site was made. The abdomen having been opened, a large quantity of fluid escaped. The intestines were bound down to the posterior wall of the abdominal cavity, and they occupied a very small space, several bands of lymph appearing to tie them down; these were carefully broken. The dull space referred to was next carefully examined, the peritoneum found greatly thickened and studded with tubercles, several patches having commenced to suppurate. While Dr. Mayne's hand was in the abdominal cavity, about six gallons of water, which had been boiled and allowed to cool to a temperature of 105° F., were poured into it, and during the process some more of the adhesions carefully broken down. The hand was then removed and all the water that would was allowed to flow away, but no attempt was made to empty the cavity. The wound was now closed and the patient put to bed and given a hypodermic injection of ether; as she seemed very weak, some brandy was also given. About two hours afterwards vomiting occurred, and continued during the night. At ten o'clock the temperature was 104·2°; pulse 140, weak and compressible.

[1] Deutsche Med. Woch., No. 20, 1890.
[2] THE LANCET, vol. ii. 1890, p. 1023.

She was given morphine and atropine hypodermically, and each alternate hour two tablespoonfuls of beef-tea with two teaspoonfuls of brandy, and a sherry glassful of champagne. The following morning she expressed herself as better, but extremely weak and sore where the wound was; temperature 103°. She steadily improved, the temperature on the morning of the 22nd being only 99°. She left the hospital on April 2nd, and has since been (for several months at service as house and parlour-maid, and is now a strong healthy-looking girl.

CASE 2.—K. W——, aged fifty, was admitted into hospital on July 6th, 1889, suffering from an attack of peritonitis. On examination an ovarian tumour, which occupied the right side, was found. Having been kept quiet and under the influence of opium she speedily recovered from the symptoms of peritonitis. On the 14th, chloroform having been administered, Dr. Mayne operated, and removed a large polycystic tumour of the right ovary, which was very adherent to the peritoneum (left ovary healthy). Having washed the cavity of the abdomen out with water, which had been boiled and allowed to cool to a temperature of 105° F., the wound was closed and dressed, and the patient placed in bed. Temperature 99°. Hypodermic injection of morphia and atropine was given. Next morning the temperature was normal, and never rose. The only complaint she had was that the surgeon would not open the dressing and look at the wound, which was done on the 21st, when it was found perfectly healed and the stitches removed. She left the hospital on Aug. 2nd, nineteen days after the operation, and has since been in good health.

CASE 3.—M. C——, aged eighteen, of strumous appearance, was admitted on July 11th, 1889. On the 14th, chloroform having been administered, a tumour (which was monocystic, and sprang from the left ovary, had a short pedicle, and was very adherent) having been removed, and the abdomen washed out with water, as in the previous case, the wound was closed and dressed, and the patient put to bed. The pulse being weak, she was given some brandy and a hypodermic injection of morphine and atropine. Temperature 99·3°. There was slight vomiting during the evening. She was given another hypodermic injection of morphine and atropine. At ten o'clock next morning the temperature was 99°, and continued at this until she went home on Aug. 3rd. This patient had been tapped before coming to hospital. With the exception of having had a slight cold she has been in good health since the operation.

Medical Societies.

ROYAL MEDICAL & CHIRURGICAL SOCIETY.

The Treatment of Strangulated Hernia when the Intestine is Gangrenous or Ulcerated.

AN ordinary meeting of this Society was held on March 24th, the President, Mr. Timothy Holmes, in the chair.

Mr. C. B. LOCKWOOD read a paper on the Treatment of Strangulated Hernia when the Intestine is Gangrenous or Ulcerated, of which the following is an abstract. The communication was based on the analysis of cases of hernia in which the intestine was gangrenous or ulcerated, collected from the records of St. Bartholomew's Hospital, and upon the details of two others in the author's own practice. The St. Bartholomew's Hospital cases were treated in the manner laid down by Sir William Lawrence—namely, "by a free incision of the mortified part, in order to unload the distended intestinal canal, or, if the gut should have already given way, to divide freely the integument and sac, and to leave the subsequent process of cure entirely to nature," the stricture being also divided, if necessary, for the proper flow of fæces. Four of the thirty-five St. Bartholomew's Hospital cases recovered, three of them completely; one had a fistula eight months after the operation. These patients only recovered after repeated operations, and the details of their cases were given. Thirty-one (88·57 per cent.) of the St. Bartholomew's Hospital cases died and both of the author's cases. One of the latter had no proper relief from the opened bowel, although there was a free passage, and the other fatal cases showed that this was not at all unusual. The causation of the absence of relief was discussed and illustrated with cases, and the conclusion was arrived at that the usual operation could not be depended upon to give relief. Next the other causes of death were examined into, and it was shown that intra-peritoneal or subperitoneal fæcal extravasation might occur, or that the gangrene or ulceration might continue to spread to the bowel within the abdomen, or septic peritonitis might spread from the sac to the rest of the peritoneum. Should these dangers be escaped, the patient incurred the risk of dying of inanition. All of these accidents were illustrated from the list of fatal cases. The alternatives to performing the usual operations were next given, and the statistics of treatment by clamp, secondary suture, and of primary resection and suture were mentioned. The conclusion was in favour of primary resection and suture, and the *rationale* of the procedure was briefly described.

Mr. MAYO ROBSON sent a communication from Leeds bearing on the subject of the paper. He agreed that primary resection was the best treatment to pursue in these cases, and he had twice carried out this method successfully within the last two years. The first case was that of a middle-aged woman, who had a small hernia which had been strangulated for eleven days. The gut became gangrenous, and he resected the dead portion and brought the intestine together with Lembert's suture. The second case, in a woman aged sixty, was one of strangulated femoral hernia. A large portion of gangrenous omentum was removed, and the necrotic bowel was resected as in the other case. The bowels were open on the third day, and there was no abdominal trouble. He held that this treatment was far more satisfactory than the old method, and the conditions were different from those existing in cases of resection after fistula, for there was no difficulty in getting the two tubes of gut to fit.

Mr. BRYANT was surprised to find that the mortality of this affection was so terrible; he certainly thought that there was a larger percentage of recoveries; at least he could recall a good many cases which got well. In considering the question of resection it should be remembered that the bulk of the cases of gangrene occurred in femoral rather than inguinal hernia. He had looked up thirty-one cases from the records of Guy's Hospital, and twenty-six were femoral, four were inguinal, and one umbilical. It followed that the operation would have to be done on small herniæ with narrow necks, and it would be difficult to enlarge the incision freely. The majority of cases which presented themselves were almost moribund before they were operated on, and the surgeon as a rule felt himself justified in doing only that which would preserve life, and was not able to resort to a grave operation. It might perhaps be done where there seemed to be a reasonable chance of recovery, in those instances where the bowel was almost but not quite gangrenous. He held that in these cases the gangrene did not extend upwards, but was a gangrene *per se* following on the long blood stasis. In the cases he had collected there was not one instance of fæcal extravasation, and in only one was there peritonitis other than local. All the patients died collapsed from want of power. It should be remembered that there was often firm union between the neck of the sac and the injured intestine, and hence, if an attempt were made to draw down the gut, the result might be only to tear away the gangrenous portion. In order to draw down the intestine it would be necessary to incise very freely the neck of the sac, and this would be difficult in femoral hernia. The incision in some cases would have to be so free that the result would be literally to perform a laparotomy. In young patients with a hernia in the inguinal region of congenital character and with acute gangrene, the plan suggested by the author would be the best course to pursue. In conclusion, he held that the treatment could only be applied to a very small number of cases, and for the majority the old form of treatment would be adhered to. Sir William Lawrence had recommended that as much as possible of the gut should be returned towards the neck of the sac, so as to leave as small a spur as possible after the gut had sloughed away. He could recall two of Mr. Cock's cases which were treated in this way, and which got well. That these patients did not die from obstruction was evident from the fact that in ordinary cases of strangulated hernia seven, fourteen, or twenty-one days might elapse before the bowels were open, and yet no symptoms of obstruction ensue.

Mr. BENNETT said that the treatment described was no doubt the ideal one, but it was not always easy to adapt an

ideal treatment to ordinary practice. In many patients the condition was such that the question of resection could not be considered. In many cases when the bowel was laid open no relief to the obstruction ensued, no passage of fæces took place, owing to the paralysis of the gut; but if under these circumstances resection were done the patient would be no better off. In those cases where opening of the gut was not followed by evacuation relief could be easily obtained by introducing a tube, and drawing off the contents of the bowels. He had done this twice successfully, and thus the opening in the abdominal wall might be the means of saving the patient's life. The method he had advocated of returning the gut within the neck of the sac gave the patient a chance, and no more could be said of the plan recommended by the author. In one of his cases the bowel had given way after being so returned, but the drainage-tube inserted at the time carried off the fæces. Even if there were an aperture in the bowel he would tie it up, and return the gut towards the abdomen, providing a drain, and this resembled the method of Mr. Cock. In young people in good condition the operation might perhaps be performed, but at the best its application was limited, and he held that it was to be especially avoided in cases of paralysis of the gut.

Mr. HULKE felt able to endorse most of Mr. Bryant's remarks, but where resection was not contemplated he would reject alike both drawing down or thrusting up the gut. He was surprised at the heavy mortality of these cases. He advocated clipping away the gangrenous intestine and soaking thoroughly what remained with zinc chloride solution. He thought the combination of resection with radical cure was dangerous, for if union did not take place there would be a mechanical bar to the outflow of fæces, and thus a purulent peritonitis might result.

Mr. TREVES said that when this subject was brought before the Medical Society of London in 1885 by Mr. Banks it was surprising what great differences of opinion existed with regard to treatment. These cases were rare in the individual experience of any surgeon. He pointed out that the author was dealing with a fallacy when comparing the statistics of the old method as illustrated by the history of St. Bartholomew's Hospital cases with the cases of primary resection tabulated by McCosh, for the cases in the latter table were all selected. The author had likewise failed to draw attention to the mortality after the operation for ordinary strangulated hernia. Taking all cases at the London Hospital as they came, he found that the mortality was nearly 50 per cent. It was curious that surgical instinct had almost always been opposed to resection of the bowel, notwithstanding that the first two cases recorded by Ramdorh in 1727 and by Arnaud in 1732 were successful. When he was the surgeon on duty for the emergency cases at the London Hospital he found that he had operated on seventy-three cases of strangulated hernia, in six of which there was gangrene of the gut; the latter all died. In two of these he left the bowel as it was, in one he cut it open and stitched it to the parietes, and in three he resected the gangrenous portion and united the cut ends. The patients were most of them desperately ill, and were not suitable subjects for an elaborate plastic operation, which might take three or four hours to perform, and the average from McCosh's table was one and half to two hours. The operation was usually done in an atmosphere of putrid pus. As in acute intestinal obstruction the less that was done the better, and as the patients died of the obstruction and not the gangrene, the removal of the gangrenous portion was not essential. If the bowel were cut into and nothing escaped from it, it might be relieved by a tube, or better by an aperient; but if the gut were resected and united, the patient would not be one whit the better as far as this was concerned. No one could speak with precision upon this matter; but it seemed to be the simplest method to open the sac and relieve the obstruction of the bowel, associating this with division of the stricture. The gut might either be opened or left to open of itself, but no attempt should be made to pull it down without first nicking the neck of the sac. The gangrene was not a spreading gangrene, for it only extended in the proximal portion of the gut where it ensued from the excessive distension.

Mr. LANE was inclined to differ entirely from previous speakers. The operation of resection could be done easily and rapidly by Senn's method. He himself had operated on two cases in this way; one got well, and the other, which was almost moribund at the time of operation, went on well for five days, when the proximal bowl became gangrenous; this might have been prevented if he had excised more gut at the time of operation.

Mr. LOCKWOOD, in reply, said that the difficulty of resection was not what it used to be, and the newer methods promised a better result. His paper was only intended to make out a case for a trial of resection on patients who had a reasonable prospect of recovery. He agreed that it would be wiser to put a drainage-tube in, though he could conceive that the tube might in some cases do harm. In performing the operation of resection the proximal portion of gut should always be emptied before proceeding to suture.

EPIDEMIOLOGICAL SOCIETY.

The relations of Saprophytic to Parasitic Micro-organisms.

A MEETING of this Society was held on Feb. 18th, Joseph Ewart, M.D., President, in the chair.

Dr. LOUIS PARKES, in his paper on this subject, said: These micro-organisms, microbes, or bacteria were low forms of life, consisting of protoplasm enclosed in a membrane of cellulose, without chlorophyll, and multiplying by fission, whence they were also termed schizomycetes. The saprophytes were those bacilli, micrococci, &c., which, subsisting on dead matter only, swarmed in the air, earth, and water, and to which, in conjunction with yeasts and moulds, all fermentative and putrefactive processes in organic matter were due. The parasitic micro-organisms, on the other hand, preyed on living matter alone, or equally with dead, splitting up the albumens into other organic bodies or bases. This power of attacking non-living matter, evidence of a certain degree of saprophytism, enabled us to cultivate many pathogenic organisms in artificial media, as peptone gelatine, milk, broth, serum, and agar-agar, and by inoculating animals with the pure cultures to study their action on the living body. These, which included the microbes of tubercle, diphtheria, anthrax, erysipelas, tetanus, and many others, were called "facultative" parasites, while those which were not hitherto known to develop out of the living body were termed "obligate" parasites. To this class belonged the micro-organisms of small-pox, vaccinia, measles, whooping-cough, &c., and of them we necessarily knew but little. The division, moreover, was only provisional, since improved methods of culture might enable us to transfer some or even all of them to the facultative class. Another subdivision of the parasites had been proposed—viz., that into (1) toxic and (2) infective micro-organisms. The latter, including those of the exanthematous fevers, were found to pervade the blood and every organ of the body; the former, of which those of tetanus and diphtheria were typical examples, acted on the organism through the toxines or ptomaines which they produced. These chemical substances could be isolated, and in a state of chemical purity, inoculated into an animal, gave rise in the absence of the bacilli themselves to all the phenomena of the disease. In the case of man the bacillus of diphtheria was confined to the throat or seat of inoculation, though the phenomena of the disease, owing to the diffusion of the poison, were general. Closely corresponding with the division of parasitic micro-organisms into obligate and facultative was that of the respective diseases into epidemic and endemic on etiological considerations. By the former was to be understood those which, as small-pox, scarlatina, and measles, were propagated by personal intercourse only, the periods intervening between the so-called epidemics being determined by the time required for the accumulation of a new and susceptible population. By endemic diseases was meant those in which personal infection played either no part or a secondary one only, the principal factors being local and climatic—in other words, conditions connected with the presence and propagation of the micro-organisms in the outside world, with the degree of susceptibility of the individual to invasion by them. Such, in the strictest sense, were malaria and tetanus, tubercle for the most part, and in a wider sense cholera, enteric fever, diphtheria, and all other diseases, which, though propagated more or less by human intercourse, were amenable to sanitary improvement. Their recurrence as so-called epidemics depended on the existence of conditions favouring the development of the microbes in a locality, and it was highly probable that their entrance into the

body was a mere accident and but a small point in their life history. Whatever the explanation of immunity conferred by one attack against subsequent infection, it was peculiar to the epidemic class, the endemic diseases, as a rule, conferring little or no such protection, though it would seem that some degree of insusceptibility was acquired by long residence in infected localities, and that persons recently arrived were most liable to infection. It was an interesting question whether such pathogenic organisms might not be developed by a long process of evolution from indifferent saprophytes, and that the comparative insusceptibility of the native populations might not be attributable to the previous influence of transitional and less virulent microbes, incapable of giving rise to the disease, but giving an immunity like that following inoculations with attenuated cultures. Such was the opinion of Professor Hueppe and Dr. Cartwright Wood, who found in earth and water a bacillus morphologically indistinguishable from that of anthrax, but without any pathogenic action. White mice, however, when inoculated with it, were in most cases rendered absolutely refractory to subsequent inoculations with the B. anthracis, though control animals, as usual, invariably succumbed. In the few that did take the disease it ran a chronic course, as seen after inoculations with the attenuated virus. These researches seemed to show that some saprophytes possessed the power of splitting up living albumens, as otherwise they could not have any such action on the living organism, and to offer a scientific explanation of the genesis of pathogenic micro-organisms. The relation between septic diseases and the products of putrefaction was a very close one. The febrile disturbance and metastatic abscesses following the inoculation of torulæ and aspergilli were interesting in this connexion. On the other hand, the attenuation of pathogenic micro-organisms by cultivation under unfavourable conditions, and the fact that these degenerated microbes grew more luxuriantly in artificial—i.e., in non-living—media than their original forms, seemed to point to a reversion to the saprophytic character. If such evolution were still going on, we could well understand the striking contrast between the uniformity of the phenomena of diseases depending on obligate parasites, and the anomalous cases and variety of symptoms exhibited by those caused by the facultative, as enteric fever and diphtheria; and we might yet expect new forms of disease to appear in the world as the result not of a *de novo* origination, but of a long previous evolution. Such a theory was in harmony with the now almost universally accepted ideas of the origin of species associated with the name of Darwin.

Dr. WILLOUGHBY said that he had listened with the deepest interest to Dr. Parkes' paper, having been himself the first to put forward a rational classification of specific diseases in which he had used the terms intra- and extra-corporeal contagia in almost the same sense as the obligate and facultative parasites of Dr. Parkes, and had also, in a paper read before this Society, and afterwards in his work on the "Natural History of Specific Diseases," advanced identical theories of evolution and degeneration, and the same explanation of immunity, as well as of the greater variety of symptoms and absence of subsequent immunity in diseases of his extra-corporeal class of contagia, which he held to be less differentiated or specialised than the intra-corporeal or obligate parasites. The staphylococcus pyogenes aureus was certainly a parasitic saprophyte unable to attack healthy living tissues, but he was inclined to consider the results of inoculations with the aspergillus and torula as rather akin to actinomycosis, or perhaps simply as the effects of embolism. With regard to the toxic or infective character of diphtheria, he would observe that Dr. Klein had found the bacilli not only as Dr. Parkes stated, in the organs of the cow after death, but in the milk, even before the appearance of the eruption, as well as in the contents of the vesicles afterwards. Dr. Parkes had spoken of influenza as an epidemic *sui generis*, not apparently propagated by human intercourse. He was, on the contrary, convinced that the progress of the late epidemic left no doubt as to its being spread by that means alone, its course having been independent of, or opposed to, the prevailing winds, slow in Siberia and Russia, but rapid so soon as it reached the network of railways in Central and Western Europe, diverted by the mountain ranges of Scandinavia, invading Norway, not from Sweden, but later from Holland and England, and deflected in like manner by the Carpathians, reversing its course down the valley of the Danube, and following in direction and time the ocean routes to America, Africa, India, and Australia; and in India showing the same relation to railways and other facilities for travel that it had in Europe. He referred to Dr. Salmon's experiments on the absolute immunity to swine plague imparted to pigeons by inoculations with the products of the culture of the bacilli, contrasting with these those of Roux and Yersin on diphtheria, in which the products set up all the phenomena of the disease, apparently precluding all hope of the prophylactic inoculations against this disease so often promised by the school of Pasteur. Dr. Willoughby was inclined to give the fullest adhesion to Metschnikoff's doctrine of phagocytosis, but was very incredulous as to Hueppe's and Cartwright Wood's alleged discoveries. Buchner long ago believed that he had effected the transformations of the hay and anthrax bacilli into one another, but had since fully recanted.

Dr. COPEMAN, as a working bacteriologist, was equally sceptical on this point, and said that Dr. Klein too had now admitted that his assumed evolution of the B. anthracis was an error of observation, the air of the laboratory having been charged with anthrax spores. He did not doubt the evolution of pathogenic from saprophytic micro-organisms, but was convinced that the process had been a work of centuries, or longer, and was not to be achieved in the laboratory. The nature of the albumoses, ptomaines, toxines, &c., called for minuter examination, since they seemed to include bodies of the most diverse and even antagonistic properties. He referred to the extremely poisonous character of some of the transitional products of the digestion of albumen as bearing on these problems.

Sir JOSEPH FAYRER, though asserting his disbelief in the communicability of cholera by human agency or material means, urged bacteriologists to pursue their investigations in the calm, temperate, and judicial spirit shown by the lecturer. He differed from many of their conclusions, although unacquainted with their methods, but, provided they did not ignore other causes of disease, their labours could not fail to lead us nearer to the truth.

MANCHESTER PATHOLOGICAL SOCIETY.

A MEETING of this Society was held on March 11th, Mr. G. A. Wright, President, in the chair.

Spontaneous Combustion.—Dr. E. S. REYNOLDS read a paper on so-called spontaneous combustion, with details of a recent case. All the reported cases of so-called spontaneous combustion might be divided into five classes: (*a*) Hysterical, (*b*) spurious, (*c*) true spontaneous combustion, (*d*) increased combustibility, (*e*) homicidal. Probably no such thing as true spontaneous combustion has ever occurred, and almost every case is merely one of increased combustibility, the body being first set on fire and then going on burning independently like a candle. The presence of fat in the body is a great aid, although some cases have been thin. Alcohol seems to play a more important part, but how it acts is unknown. In a recent case the woman, aged forty, was thin, an old alcoholic, had while drunk fallen near a hearth, where she was found next morning with the flesh still burning. The femora were carbonised, the knee-joints open, but the stockings entire, the abdominal wall burnt away, and the intestines and stomach protruding, the latter being burnt through. The hands, head, and hair had escaped. The surrounding furniture was merely scorched.

Papilloma of Kidney.—Mr. T. JONES showed sections of a papilloma removed from the pelvis of the kidney. The patient, aged fifty-five, had suffered for eighteen months from almost constant hæmaturia without any pain. He, however, complained of a throbbing sensation confined to the region of the right kidney. This led to exploration of this organ and the removal of the growth. Three days later the hæmaturia completely ceased, and the man made a good recovery.

Cerebral Hæmorrhage and Arterial Degeneration in Early Life.—Dr. T. HARRIS showed preparations from a case of cerebral hæmorrhage which had occurred in a lady twenty years of age. The hæmorrhage was a profuse meningeal one, which had arisen from the rupture of an aneurysm, the size of a small pea, of the left middle cerebral artery. At exactly the corresponding position of the right middle cerebral artery was another aneurysm, somewhat larger than

the one on the other side, and which had not ruptured. There was no sign of degeneration in the vessels at the base of the brain evident to the naked eye, but microscopically they were found to present the changes of endarteritis. The kidneys presented very few changes to the naked eye, the most notable one being that on separating the capsules small portions of kidney substance were torn away at various parts, but between these torn-out portions the kidney surface was quite smooth and different to an ordinary granular kidney. Microscopically there was found to be no general interstitial nephritis, but marked changes in connexion with the arteries. The arterioles presented marked perivascular fibrosis and decided hyaline changes in the intima. Some of the glomerular capsules were slightly thickened. The aorta presented small patches of atheroma, and the small vessels in the loose tissue round the aorta showed both periarterial and endarterial changes. The endarteritis in some of these vessels had led to nearly complete obliteration of the lumen. The left ventricle of the heart was much hypertrophied. There was no valvular disease. Other organs healthy. There was no trace of syphilitic history in the family, and the girl had no idea that there was anything seriously the matter with her before the fatal attack came on. For the last few years she had complained of headache, which would last only a few hours, but during the last four months she had not complained at all. During the recent frost she had been taking a great deal of violent exercise, walking and skating. In the evening of the fatal termination she was at a dance, but the attack commenced before any dancing had been indulged in. Dr. Harris regarded the case as probably one which, if life had been prolonged, would have gone on to the development of a cirrhotic kidney, and which probably corresponded clinically to the pre-albuminuric stage of Bright's disease.

NORTH OF ENGLAND OBSTETRICAL AND GYNÆCOLOGICAL SOCIETY.

THE annual meeting was held in Manchester on Jan. 16th, and the office-bearers for the year 1891 were elected. The retiring president, Dr. Wallace (Liverpool), made a few remarks, congratulating the Society on the work of the past year. The President, Dr. Braithwaite (Leeds), then took the chair.

Uterine Cancer.—Dr. KEELING (Sheffield) showed two specimens of Uterine Cancer, removed by vaginal hysterectomy, and read notes of the cases. The first case was one of cancer of the cervix, which occurred in a widow aged forty. The body of the uterus was freely movable and unaffected by the disease. The operation was performed in the usual manner in July, 1890. The patient lost blood by the bladder for forty-eight hours after the operation, but otherwise her convalescence was uninterrupted, and she left the hospital six weeks after operation. Fifteen weeks afterwards she was again examined, and a ring-like swelling was found in the vaginal roof. There was a yellow discharge, but the patient's general condition was very good. A month after this the recurrent growth was very marked. The second case was one of malignant ulceration of the cervix, with enlargement of the body of the uterus. The whole uterus was removed in November, 1890, only three ligatures being used for each broad ligament. There was profuse hæmorrhage during the operation. The case ended fatally some weeks after from congestion of the lungs and meningitis. At the necropsy there was no evidence of cancerous infiltration. In the discussion on these cases Dr. Wallace, Dr. Sinclair, Dr. Donald, Dr. O'Hagan, and Dr. Braithwaite took part

Ectopic Gestation.—Dr. ROBERTSON (Oldham) read notes of a Case of Ectopic Gestation, and exhibited the specimen. The patient, who had previously borne two children, commenced to have uterine hæmorrhage nine weeks after a menstrual period. Ten days afterwards she commenced to have attacks of pain in the lower part of the abdomen, accompanied by vomiting. She was admitted to the Oldham Infirmary. At that time she was blanched and her abdomen was distended, but no definite tumour could be made out. The case was diagnosed as one of intra-peritoneal bleeding, and as she became more pallid and the abdominal distension increased, it was decided to make an exploratory incision. On opening the peritoneum liquid and coagulated blood escaped freely. On the left side of the pelvis a round tumour was felt, with a mass protruding from it, and on traction being made a small fœtus was brought into view. As bleeding was still going on freely, the pedicle of the tumour, which appeared to be composed of uterine tissue, was transfixed, tied with silk, and divided. The fluid and coagulated blood were then washed out of the abdomen by a stream of hot water, a drainage-tube was inserted, and the wound stitched up. The patient was discharged cured about a month after the operation. Some remarks were made on this case by Dr. Sinclair and Dr. Braithwaite.

Sickness of Pregnancy.—Dr. LAUDER (Manchester) read notes of a case of Incoercible Sickness of Pregnancy resulting from a Hydatidiform Mole. The patient, a multipara, aged twenty-eight, was admitted into the Maternity Hospital on Nov. 4th, 1890. She had missed three menstrual periods, and was suffering from obstinate vomiting. After trying small quantities of milk by the mouth for some days nutritive enemata and suppositories were administered. Some days after this nourishment by the mouth was again tried, a teaspoonful of peptonised milk being given every hour, but the sickness returned in a few days, and rectal alimentation was resumed. On Nov. 10th uterine hæmorrhage occurred, and it was decided to induce abortion. It was found, however, that the uterine cavity was occupied by a hydatidiform mole. On this being scraped out, the patient rapidly improved, and soon after was discharged cured. The case was discussed by Dr. Donald, Dr. Edge, and Dr. Braithwaite.

At a meeting held at Sheffield on Feb. 20th, Dr. James Braithwaite, President, in the chair, specimens were shown by Drs. SINCLAIR and KEELING, and Mr. LAVER (Sheffield).

Pelvic Abscess and Abdominal Section.—Dr. HELLIER (Leeds) read a paper on three cases of Pelvic Abscess, and treated by abdominal section, in the Hospital for Women and Children at Leeds. One case originated in a pyosalpinx, and formed a large abscess on the left side of the uterus, surrounded by matted tissues on all sides, into which the abscess extended. A second case was an abscess of the broad ligament of uncertain origin. The third was apparently a pelvic cellulitis. In each case the condition of the patient made prompt treatment urgent, but the abscess was not pointing in the pelvic or abdominal wall. In each case abdominal section was performed with a small median incision; the exact position of the pus was determined with the aspirator, the abscess was opened and thoroughly drained, and finally the cyst wall was stitched to the edge of the parietal peritoneum. The patients had all done well; the most recent case, which was on the 27th ult. operated on, is still under treatment. Dr. Hellier said that this treatment seemed to be applicable to those cases where suppuration is present in the pelvis, and yet there is no pointing obvious in rectum, vagina, or groin. He did not think that abdominal section would supersede pelvic incision and drainage, but he said that it provided a means of dealing with cases not amenable to treatment from below. In one of the cases cited vaginal incision and drainage had been thoroughly tried, and in spite of this the abscess had not only not healed, but had opened into the bladder, while after the abdominal incision the whole was quickly cured. In such cases it is often impossible to say before operating exactly where the pus is, and he had hesitated before opening the abdomen lest he should not be able to approximate the cyst wall to the edge of the parietal peritoneum. This, indeed, proved a difficult thing to do with an abscess lying deep and having friable walls. He was now inclined to the opinion that often all this is not so vital a point as it seems at first, provided only that good drainage be secured and that the fear of being unable to secure the cyst wall in this way should not deter an operator from opening the abdomen if there were strong reasons for doing so on other grounds. These cases need much care in nursing, and the rule that cases of abdominal section should be kept on very short commons for a day or two after operation must not be enforced in the case of patients worn down by previous hectic fever. In conclusion, Dr. Hellier said that as in general surgery abscesses did not always heal when incised and drained, so probably a residuum of these cases would fail to recover; yet, having had an opportunity of watching such cases treated on the old lines in other hospitals in years gone by, he felt convinced that abdominal section for pelvic abscess is a gain to gynæcological surgery, and that certainly these three lives had been saved by this mode of treatment.

Electrical Treatment of Uterine Tumours.—Dr. BURTON

(Liverpool) opened a discussion on this subject. He said his experience had not been very large, but such as it was he would lay it before the meeting. He had treated a total of nineteen cases of uterine fibromata by the electrical method introduced by Dr. Apostoli. He was able to divide them into six classes: (1) Where temporary improvement had been effected—two cases; (2) where he believed permanent improvement had resulted—seven cases; (3) where no improvement had been obtained—three cases; (4) where the treatment had not been sufficiently tried—three cases; (5) cases unfit for treatment—two cases; (6) where the result was doubtful—two cases. Details of the cases were then given. In Case 1 in the second group the tumour, which was of moderate size and accompanied by hæmorrhage, was much reduced in size after nine applications. After this the patient became pregnant for the first time in her life, but miscarried about the third month. When last seen, eighteen months after the cessation of treatment, the patient was in good health. In the second case the tumour was so much reduced in size by six applications that the patient's clothes showed that her girth was less by one inch and a half. In July, 1890, eighteen months after treatment, the tumour gave her no trouble. About the diminution in size there could be no doubt. In the third case the tumour was of moderate size, but the chief feature was the hæmorrhage. The patient had eight applications between Feb. 1st and April 30th, 1888; although not by any means well she was very much improved by the treatment. Case 4 was a small myoma in the anterior uterine wall with hæmorrhage. After eight applications the tumour was scarcely perceptible. Two years later there was no return of the symptoms. Case 5 was a tumour reaching to the umbilicus; after twenty-eight applications the tumour was much smaller (by at least one-half), and the patient felt well; eighteen months after the last application she continued so. Case 6 was a small tumour in the anterior wall of the uterus with pains and hæmorrhage. Applications were made at varying intervals for about three months, when treatment was discontinued, as there appeared no further need of it. Case 7 was a large fibro-cystic tumour reaching to the ribs, and was of many years' standing; at the patient's wish applications were made and were given about three times a week for four weeks. Diminution in size was considerable and relief to symptoms marked. She considered herself sufficiently well to do without further treatment, but expressed herself as perfectly satisfied with the progress that had been made. Further details were given, and the speaker then summed up his conclusions as follows: 1. In small fibroids almost entire, if not complete, disappearance of tumour may be effected. 2. In large ones, considerable diminution in size with relief of symptoms may be expected in a fair proportion of cases. 3. When relief has been obtained there may be a return of the symptoms sooner or later, which may again call for treatment. 4. In a proportion of cases (probably from one-third to one-half) little or no effect will be produced without puncture. 5. The speaker knew of no case where the tumour had become larger under treatment than it was before it was commenced; so that he claimed that the growth is at least checked in all cases. 6. In the words of Dr. Bröse of Berlin at the International Congress, "Electricity will not take the place of or exclude myomotomy, but it will save many cases from it." He claimed, therefore, that it ought to have a patient trial in every case, before recourse is had to dangerous methods of treatment. 7. If ten or twelve applications made in the course of three or four weeks do not give any result, nothing need be expected from a continuance of the treatment unless punctures be made.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

A MEETING of the Pathological Section was held on Feb. 20th.

Specimen of Cystic Kidney.—Mr. KENDAL FRANKS showed a specimen of a large kidney, weighing over two pounds, which was in a condition of advanced cystic degeneration. The kidney was removed by operation on Jan. 13th, through a median abdominal incision, from the left side of a married woman aged twenty-five; and it was specially remarkable in this: that the right kidney, which was examined through the abdominal wound at the time of operation, was apparently healthy. This is a rare condition. The diagnosis of renal tumour was made previous to operation, but its exact nature was not determined. The patient made an uninterrupted recovery. Mr. Franks discussed at some length the differences between isolated, though sometimes multiple, cysts of the kidney and the conglomerate cysts of cystic degeneration.—Dr. M'KEE thought there was no essential difference between what Mr. Franks had called "isolated" cysts of the kidney and the "conglomerate" cysts of the specimen shown that evening. Both were equally congenital, and the latter was formed by the confluence of single cysts. The cysts resulting from chronic nephritis were mostly microscopic in size, and never larger than a pea.—Dr. ALFRED SMITH reminded Mr Kendal Franks that two cases of cystic degeneration of the kidneys were reported in this section during the past three years as having occurred in the fœtus at the Rotunda Hospital, and were fully reported in the Transactions. One was a large cystic variety due to a congenital stricture of the urethra; the other, shown by Dr. Bagot, was of the fine cystoid variety.—Mr. PATTESON wished to ask Mr. Franks if any microscopical examination had been made of the case before the section. Judging from the microscopical appearances, the tumour clearly belonged to the congenital cystic variety. The condition of the urinary tract was not stated, and those cases which Virchow more especially described were conditions of dilatation of the uriniferous tubules due to congenital absence of the pelvis of the kidney or other analogous causes. The importance of careful microscopical examination was shown by a consideration of the views recently put forward by Mr. Shattock and confirmed by Mr. Bland Sutton.—Mr. KENDAL FRANKS, in reply, said that it was generally admitted that in cases of cystic degeneration of the kidney the urinary passages are patent, and the condition could in no way be attributed to an obstructive cause. Virchow's view was that the condition originated *in utero* as an interstitial nephritis. The first case alluded to by Dr. Smith was evidently not an example of conglomerate cystic disease, but was a hydronephritic kidney, the result of congenital atresia of the urethra. He could not agree with Dr. M'Kee that isolated cystic disease and the conglomerate cysts were not distinct conditions. The isolated cysts were not congenital, but frequently may be traced to an injury, and one kidney is alone affected. Other differences might also be mentioned.

Exhibition of Cerebral Tumour.—Dr. E. H. BENNETT exhibited a cerebral tumour occupying a large part of the motor area of the right cerebral hemisphere, including almost the entire arm centre, which had proved fatal by intracranial pressure, but without at any time paralysis of the left arm. The sections showed the size of the tumour to be about that of half a Tangerine orange, the base of the hemisphere being directed against the dura mater. The tumour lay enveloped in the cortical convoluted surface directly over the fissure of Sylvius. The microscopic examination was reserved until the more important facts relating to the site of the tumour had been demonstrated.—Mr. STORY had examined the eyes of the patient when in hospital and found neither optic neuritis nor hemianopsia. Proptosis (or rather retraction of lids) was present on both sides, winking was infrequent, and the upper lids did not follow the downward movement of the globes. There was partial anæsthesia of corneæ and conjunctivæ, and loss of conjunctival reflex. It was an interesting fact to observe these well-known signs of that remarkable disease, exophthalmic goitre, in an undoubtedly cerebral case, and it strengthened the modern view that this disease is of central origin.—Dr. M'WEENEY gave the result of his experience of cerebral tumours examined post mortem during his tenure of office as pathologist to the Mater Misericordiæ Hospital.—Dr. M. A. BOYD said a case of cerebral tumour under his care was, like the president's case, a remarkable example of a considerable motor area of the brain being involved in a tumour without any motor symptoms whatever being present.—Dr. R. G. PATTESON was not quite certain whether Dr. Bennett had spoken of aphasia in the case he brought forward. Undoubtedly, in certain cases transposition of the speech centre occurred, and in such cases observation had established the presence of an exaggerated development of the more complex muscular movements on the left side. As regards the non-occurrence of motor phenomena in connexion with the presence of a tumour in-

volving most of the motor area, it was possible to conceive, in the case at least of slowly developing tumours, that a certain amount of accommodation could take place, either through already established or newly formed channels, in the opposite side; and it was not, he thought, an exaggerated view to attribute to centres of the higher level a power of associated action which was daily exemplified in the subsidiary centres of the spinal cord after separation from those of a higher order. In the case of more rapidly developing tumours the explanation was of course more difficult.

Hydatid Cyst of the Pleura.—Dr. DUFFEY made a communication on this subject, and exhibited a large cyst (tænia echinococcus), with numerous daughter cysts, removed from the right pleural cavity of a man aged thirty-one, together with the lungs, portion of the diaphragm, and the cyst wall; as well as numerous microscopic sections made by Dr. W. R. Graves, pathologist to the City of Dublin Hospital. The subject of the case had been a soldier, and had seen five years' service in India. He had been under Dr. Duffey's care for four months in June, 1890, six weeks previous to his last admission, for attacks of hæmoptysis, and was then found to have tubercular deposit in the left apex. His cough persisted after leaving hospital. About Christmas he became much worse, but continued at his work as a wine porter until compelled, by pain in the right side of the chest, violent hard dry cough, dyspnœa, and weakness, to seek admission on Jan. 21st, 1891. On examination he presented all the usual physical signs of a large pleural effusion on the right side. The liver was pushed down and the heart displaced to the left side. There was also clear evidence of the existence of vomica in the left apex and of softening in the right. There were great respiratory distress, constant hard dry cough, quick pulse, cyanotic appearance of face, but no fever. Forty-seven ounces of a clear straw-coloured serous fluid were removed by paracentesis. Alarming dyspnœa, and intense cyanosis of head, face, and neck, with burning heat of the hands, set in while the fluid was being removed. He rallied slightly, but subsequently the dyspnœa recurred, the pulse and temperature rose, and he died thirteen hours after the operation. On post-mortem examination it was found there was no pleural effusion. The pleura on the right side was most intimately adherent. In trying to detach it the hand ruptured a large tumour, which forcibly ejected a quantity of clear fluid, immediately followed by the extrusion of a large hydatid mother cyst, with a number of small daughter cysts. This cyst was situate between the diaphragmatic and pulmonary pleura. It lay within a dense fibrous capsule, intimately adherent by its external surface to the lung, pericardium, and diaphragm. The left lung was pushed upwards, forwards, and to the left by the tumour, and its lower and middle lobe greatly compressed. Its upper lobe contained numerous miliary and caseating tubercles, and in the apex one large and three small vomicæ. A similar condition, but more advanced, existed in the upper lobe of the left lung, and its lower lobe was much congested. The cyst was sterile, but the laminar construction of its delicate wall was sufficiently distinctive. Dr. Duffey referred to the remarkably few cases of hydatids that had been reported in Ireland, and to the extreme rarity, in any part of the world, of the primary development of the echinococcus cyst in the pleura. Some of the cases reported as hydatids of the pleura might have had their origin in the lung, or have forced their way into the pleura from the abdomen, especially from the liver. The author of the communication, in an extended search through the literature of the subject, could only find eight cases in which evidence existed of the primitive development of the hydatid in the cavity of the pleura. One of these was given by Davaine, two by Heller, two by Vigla, two by Cobbold, being specimens in the museum of Guy's Hospital, and one in the Army Medical Museum at Netley.

GIFT OF A NEW CONVALESCENT HOME.—On Monday the foundation stone was laid at Perranporth of the Convalescent Home which Mr. Passmore Edwards is presenting to his native county, Cornwall. The ceremony was performed, in the presence of a large assembly, by the donor's son, Mr. H. Passmore Edwards. The Home will be a memorial to Mr. Edwards' mother. The estimated cost is between £2000 and £3000, and towards an endowment fund Mr. Edwards has contributed £2000.

Reviews and Notices of Books.

Hypnotism. By Dr. ALBERT MOLL (Berlin). Contemporary Science Series. London: Walter Scott. 1890.

Hypnotism, or Psycho-Therapeutics. By R. W. FELKIN, M.D., F.R.S.E. Edinburgh and London: Young J. Pentland. 1890.

Should Hypnotism have a Recognised Place in Ordinary Therapeutics? By NORMAN KERR, M.D., F.L.S. H. K. Lewis. 1890.

[SECOND NOTICE.]

MANY theories have been put forward to explain the phenomena of hypnotism. One of the most influential of these is the doctrine of Heidenhain and Mendel, that the phenomena are due to inhibition of the cerebral cortex. Hughes Bennett supposed that the explanation was to be found in a functional disturbance of the nerve fibres connecting the ganglion cells of the cerebrum; Braid thought that the essential condition was some alteration in the circulation in the brain and spinal cord; Carpenter supposed cerebral anæmia; while Rumpf and Hack Tuke have conjectured a partial spasm of the vessels. An adequate discussion of these and other theories upon the subject would lead us far beyond our present limits, so we must content ourselves with a mere enumeration of the various views. We must pass over many other aspects of hypnotism to consider its bearings upon medical practice and therapeutics. This part of the subject is handled calmly and dispassionately by Dr. Moll, and no attempt is made to paint in roseate colours the advantages likely to accrue to our art from hypnotism. He believes those advantages to be considerable, but he is careful to observe the attitude of a scientific inquirer rather than of a prejudiced partisan. Dr. Moll is convinced that from the therapeutic point of view "suggestion" is the really important factor in hypnotism—i.e., there is generated in the patient's mind a high degree of preparedness or expectancy, the potent influence of psychical upon physical conditions follows, and thus the desired result is often obtained. "The idea of a cure should be instilled into the patient during hypnosis. If it is allowed that the idea of a cure effects a cure in many cases, there can be no doubt that suggestion is an integral part of therapeutics." This remark touches the core of the question. There are some, especially in this country, who will regard such measures as pure charlatanism, while others will retort that if the required benefit to the patient follows it matters not whether we attain that end by the administration of a drug or by "suggestion." As regards the conditions amenable to "suggestion," the following are enumerated: "All kinds of pains which have no anatomical cause (headaches, stomach-aches, ovarian pain, rheumatic and neuralgic pains, &c.)—sleeplessness, hysterical disturbances (particularly paralyses of the extremities and aphonia), disturbances of menstruation, spontaneous somnambulism, uneasy dreams, loss of appetite, alcoholism and morphinism, neurasthenic ailments, stammering, nocturnal incontinence of urine, pruritus, writer's cramp." Dr. Moll demurs to Charcot's view that only hysteria can be treated by hypnosis, and apparently regards pronounced hysteria as comparatively rebellious to suggestion. He quotes with approval Forel's remark that "a sound brain is above all things necessary for hypnosis," and adds that "in hysterical patients the brain is often by no means sound." It is well known that Ziemssen, Mendel, Ewald, and others regard the treatment of hysteria by hypnosis as only likely to result in mischief, and altogether deprecate the practice. Insanity, according to Dr. Moll, is difficult to treat by hypnosis. He affirms that benefit has been obtained in the lighter forms of mental disease (some varieties of melancholia and mania),

but that "generally the effect is less than in the neuroses," the reason being that insane persons are not good subjects for hypnosis. Improvement is alleged to attend the use of hypnotism even in organic affections, and cases are given by Bernheim, Tuckey, and the writer where benefit has been obtained in tabes dorsalis, hemiplegia, and articular rheumatism. The benefit obtained in cases of hemiplegia is explained by the view that while hypnosis cannot restore the function of the necrosed portion of brain, it does restore the functions of neighbouring parts, which functions are sometimes inhibited by the existing lesion.

Dr. Moll discusses with considerable candour the objections usually urged against hypnotism. He first notices Ewald's protest that "suggestion" is not, properly speaking, medical treatment at all, since it requires for its practice neither medical art nor medical knowledge, but only self-confidence. To this Dr. Moll replies that "medical science and psychological knowledge, the ability to diagnose and practise, are all necessary for using hypnotism." He protests that if hypnotism has been practised by quacks and charlatans there is the more need for it being taken out of their hands and properly regulated by men trained in scientific methods. The second objection to hypnotism is the danger that may attend its practice, and this Dr. Moll recognises as a point of real gravity. He retorts, however, that the recognised dangers of such agents as chloroform, strychnine, and antipyrin are not valid grounds against the cautious and legitimate use of such remedies. In reply to the charge that hypnotism induces nervousness, he says: "I agree that fixed attention too long continued may have unpleasant effects. It may be followed by nervous debility or nervous excitement. But I have never seen anyone become nervous whom I hypnotised verbally, and to whom I made no exciting suggestions." He gives the following rules for obviating any unpleasant after-effects from hypnosis:—1. To avoid continuous stimulation of the senses as much as possible. 2. To avoid all mentally exciting suggestions as much as possible. 3. To do away with the suggestion carefully before the awakening. The real dangers of hypnotism, according to Dr. Moll, are not those usually imagined, but the following—viz., the increased tendency to hypnosis and heightened susceptibility to suggestion in the waking state—i.e., the possibility of a new hypnosis against the subject's will, perhaps without his suspecting it, and the danger of his accepting external suggestions even without hypnosis. We have contented ourselves mainly with an exposition of Dr. Moll's views, as a full discussion of them would lead us beyond our present limits.

Dr. Felkin's short work goes over in briefer compass much the same ground as Dr. Moll's volume, and does not call for detailed notice from us. It is in the main a plea for further inquiry, advanced by one who has given the question considerable attention, and who doubts if the attitude of reserve hitherto maintained towards hypnotism by the profession in this country can be any longer safely or justly preserved.

Dr. Norman Kerr's pamphlet is a thoroughgoing condemnation of hypnotism root and branch. He passes in brief review the objections to hypnotism, and gives his opinion that, "in view of all these possible abuses and dangers, it passes my comprehension how it could ever have been contended that family medical practitioners should practise hypnotism on patients of both sexes and all ages as part of their regular daily work. Surely the perverted actions of hysteric patients and the existing chances of groundless and serious charges to which we are already exposed are more than enough, without the addition of hysteria-cum-hypnosis complications." We are heartily in accord with what follows, when Dr. Kerr says: "I cannot find language strong enough to express my abhorrence of the disgusting and degrading exhibitions to be seen in many public places of amusement, as well as in the select circles of fashion—sometimes for mere amusement, sometimes in philanthropic guise, sometimes for pure gain honestly enough professed—at which men, women, and young people are made to perform ridiculous antics, and to unconsciously play the fool, to the detriment of their mental health and to the depraving of the public taste."

We have also received "Der Hypnotismus," by Dr. Otto Wetterstrand of Stockholm, and a small work on Hypnotism (Renshaw) by Dr. Augustus Nicoll, but our space is exhausted, and we cannot review them at length. Wetterstrand's work is an able and exhaustive treatise on hypnotism from the point of view of a leading authority and ardent supporter of the system. Dr. Nicoll also writes on the same side, and is of opinion that "not only disease, but some of our most crying social evils, may be alleviated by a careful and expert application of hypnotism." He is an adherent of the Nancy school, and believes that sooner or later "benefits will most surely accrue to all humanity from that great boon which is waiting, nay, crying aloud for recognition—modern hypnotism." To this and all similar confident prophecies we must content ourselves for the present with saying, *Qui vivra verra.*

ERRATA.—In the former portion of the above review, published last week, two corrections require to be made. On p. 721, second column, line 28, for "Reuterghem" read *Renterghen;* on the following page, line 12, for "ecbolatic" read *echolalie.*

OUR LIBRARY TABLE.

Œuvres Complètes de J. M. Charcot. Tome IX. Paris: Aux Bureaux du *Progrès Médical.* Lecrosnier et Babé. 1890.—This, the ninth volume of Professor Charcot's writings, which are being so faithfully collected under the careful editorship of his former pupil, M. Bourneville, contains some of his earliest as well as his most recent contributions to neurology. For side by side with the memoir upon cerebral hæmorrhage, written in conjunction with M. Ch. Bouchard, in which the invariable presence and the etiological importance of miliary aneurysm in such cases were first pointed out, we find papers upon hypnotism and hysteria, to which Professor Charcot has devoted so much thought and attention of late years. The volume, too, contains a reproduction of his observations upon metalloscopy and metallotherapy made in 1877. We are not quite so much inclined as is the able editor to regard these curious records as of the first importance, and it is certainly remarkable how transient was the interest—keen enough at the time—taken in the subject. However, as a matter of history, and as exemplifying the manner in which Professor Charcot investigated this by-path of neurology, the republication of these papers is welcome. Hypnotism is treated at considerable length, and we are glad to find in an appendix the excellent paper of Babinski, which sets forth clearly the views of the Paris school on this subject, as opposed to that of Nancy. The reader should peruse M. Babinski's essay first, before committing himself to the study of the experiments detailed in M. Charcot's memoir. The place of static electricity in therapeutics, and its application especially to the treatment of hysteria, form the final part of the volume.

Preventable Deaths in Childhood. By W. WYNN WESTCOTT, M.B., Deputy Coroner for Central Middlesex. The Hansard Publishing Union, Limited, London and Redhill.—From time to time the teachings of caution deduced by coroners and jurymen from the cases which come under their observation find expression in the daily press. We are apt to think that here the matter ends. The verdict has been given, a rider perhaps appended by way of reproof or warning, and the subject will soon be forgotten. Such is

doubtless the natural tendency in the great majority of inquest cases, and it is to be feared that the official *caveat* so timely issued must often exercise but a passing and very limited influence. We therefore welcome as the herald of better things a little pamphlet just published by Dr. Wynn Westcott, Deputy Coroner for Central Middlesex, which treats, in a brief but effective statement, of the causes of preventable deaths among children, and the responsibility of those entrusted with their care. The circumstances commonly attending accidental deaths from overlaying and from physical injury or poison, the danger of domestic medical treatment, and the duty of obtaining skilled professional attendance in illness are discussed in considerable detail. A chapter devoted to the subject of death certification, and the conditions under which this primary duty should not be exercised by the practitioner, deserves attentive scrutiny. The paper closes with an instructive examination of the uses and abuses of child life insurance, of the practice of baby farming, and of their connexion with what may appear to be ignorant mismanagement. The paper is not a long one. In its present shape it should admirably serve the purpose for which it has been published—namely, the instruction of parents and others as to the risks of childhood, and the means of their avoidance. If somewhat amplified it would constitute a most useful little handbook for the practical guidance of practitioners.

The Asclepiad. First Quarter, 1891. No. 29, Vol. VIII. By BENJAMIN WARD RICHARDSON, M.D., F.R.S. London: Longmans, Green, & Co.—The opening article in this issue of Dr. Richardson's quarterly deals with the physical properties and physiological application of peroxide of hydrogen in continuation of a "research commenced in the year 1856." The readiness with which oxygen is liberated from this substance suggested many interesting experiments to the author's fertile mind, and one of the most important of his discoveries was that it acted in decomposing pus. This article is followed by one on "Cold and Mortality," a scientific exposition of the effects of lowered temperature upon the vital forces, leading to useful practical conclusions as to the means whereby the influence of cold may be best warded off. Amongst the "Opuscula Practica" are several dealing with the question of hæmorrhage and its arrest. The memoir of the quarter is that of John Hunter, a pleasant sketch of the personality, character, and work of the great anatomist, written with much discrimination and in the felicitous style of narrative which stamps all these memoirs. The autotype of Sir Joshua Reynolds' famous portrait of Hunter does not, however, appear to be quite so successful a reproduction of this work as the engraving which is so familiar to us. Dr. Koch's remedy for tuberculosis is dealt with by Dr. Richardson in a very outspoken manner, and his strictures on the *furore* excited in the medical world by the announcement of this new treatment are not altogether unmerited.

The Doctor's Holiday, or a Mediterranean Trip in Search of Health. Liverpool: Turner and Dunnett.—This is a brief account, in a sort of diary form, of one of those coasting trips in the Mediterranean which have now become so popular. The writer visited Gibraltar, Genoa, Naples, went thence to Rome, then by land to Ancona, where he rejoined his steamer, thence to Venice, Trieste, Bari, Zante, Patras, Valencia, and home. The author, who writes in a somewhat blunt style, and carefully eschews all heroics, evidently enjoyed his trip, but was not overwhelmed with admiration for anything he saw. He found even Rome disappointing. "The Tiber looks like a big gutter, its water being the colour and consistence of pea-soup. The Coliseum is a fraud, the Forum a dilapidation." The cherubs by Michael Angelo in St. Peter's "look like inflated babies." As for the Laocoon and the Apollo Belvedere, "the former is just what one expected to see, and the latter is not imposing." He is roused into a little enthusiasm by Venice, where he found it "quite refreshing that the images conjured up in the past by both poetry and prose still existed, and that everything—cathedral, churches, canals, bridges, prisons, and gondolas—all came up to expectations." He did not warm, however, to the picture galleries, and the neighbourhood of the Bridge of Sighs suggests to him chiefly "what a lot of scoundrels the Doges must have been to consign any fellow-creatures to such dungeons." At Patras he saw "the pure, unadulterated Greeks, and scarcely found them so romantic in appearance as Byronic lays had led one to anticipate." Evidently the writer has not steeped himself very deeply in classical lore, and hence the memories of Italy and Greece appeal only feebly to him. As regards the advantages of the sea voyage, he believes that its peculiarities—viz., perfect rest, pure air, out-door life, and absolute change—are, conjoined, a very potent force, whilst the astringent quality of sea breezes is in addition a strong tonic, the best remedy for some well-defined diseases, and the most agreeable for that deviation from health commonly called "seediness."

The Midwives' Registration Bill, or the Proposed Repeal of the Medical Act. By ROBERT REID RENTOUL, M.D., L.R.C.P., M.R.C.S., Fellow of the Obstetrical Society. Liverpool: F. & E. Gibbons, Ranelagh-street.—Those who wish to have in a compact form all that Dr. Rentoul has to say against the Midwives' Bill now before Parliament, and against those who differ from him, will find it in the above pamphlet. His objections are—(1) that the Bill will repeal the Act of 1886 by registering a class of practitioners not educated either in medicine or surgery; (2) that there are not cases enough by which to train and teach both medical students and pupil midwives; (3) that in certain eventualities, and if the Bill becomes law, medical students will have to study under midwives; (4) that it will lead to a great increase in criminal practices, especially in the way of stillbirth; (5) that the Medical Council will have nothing to do with the administration of such a Bill; and (6) that the poor are already fully provided for. Without sharing Dr. Rentoul's fear of all the dire consequences which he considers involved in this Bill, we should like to see any measure that is to pass so drawn as to obviate all reasonable objections. In an appendix to the pamphlet Dr. Rentoul gives an abstract of the views of various bodies on this question. The abstract shows that there is much variety of opinion. The Nottingham Medico-Chirurgical Society is explicit in saying "that it is not expedient to give any legal recognition to persons practising midwifery unless they are duly qualified practitioners." The Committee of the Birmingham Branch of the British Medical Association, on the other hand, "cordially approves the principle of the Bill—viz., the compulsory registration of midwives after due examination," but suggests various useful amendments. Other branches support the Parliamentary Bills Committee. Dr. Rentoul quotes a resolution of the Medical Council in such a way as to make it appear that this body is opposed to such legislation. This is a mistake. The Council has on all occasions recommended legislation. In the resolution referred to it only expressed its inability to undertake the necessary duties under a Registration of Midwives' Bill. We feel sure that Dr. Rentoul will see that, no doubt unintentionally, he misrepresents the position of the Council in this matter. Judging from another communication he sends us, he seems to think that the present Bill is still not dead. But it is certainly moribund, and he will have plenty of time to devise a better one. Meantime he advises all opponents to continue to petition against it.

Supplement to the Companion to the Latest Edition of the British Pharmacopœia, including the Additions of 1890. By T. W. SQUIRE, F.L.S., F.C.S, and A. H. SQUIRE. Pp. 23. London: J. & A. Churchill. 1891.—The enterprising authors of the Companion to the British Pharmacopœia are to be congratulated. In issuing this little supplement they can proudly say, "The greater portion of what is now made official by the publication of the Additions to the British Pharmacopœia is described in our current edition as *not* official; it therefore becomes necessary to issue a supplement to the 'Companion,' making this alteration." The Companion clearly got the start of the more youthful "Additions," and the authors have now to show how far their forecast has been justified, and also gently to correct the "Additions" when the latter has left itself open to reproof. The insertion of Fehling's solution instead of Pavy's is regarded as a matter for regret, and the omission of a small quantity of sulphuric acid in the copper solution is also noted. The physical properties of acetanilide, of paraldehyde, of phenacetin, of picrotoxin, of gluside, and of sulphonal are criticised, and in various points corrections are suggested. This very unpretentious little book has evidently been the outcome of much careful work, and its utility in relation to the Additions will be as great as that of the Companion to the British Pharmacopœia.

Ophthalmological Transactions, Vol. X., Session 1889–90. London: J. & A. Churchill.—The last issued volume of Transactions of the Ophthalmological Society of the United Kingdom fully maintains the standard attained by its predecessors. It commences with the presidential address delivered by Dr. Hughlings Jackson, in which he insists upon the necessity for ophthalmic knowledge, and a familiarity with normal conditions and variations, before drawing conclusions from ophthalmic appearances in the diagnosis of morbid conditions; and proceeds to review modern observations in connexion specially with nervous disease. In the Bowman lecture Professor Grut of Copenhagen gives an elaborate analysis of strabismus, in which he maintains the nervous as opposed to the anatomical theory of squint. Mr. Priestley Smith contributes a suggestive paper, based on measurements in 1000 cases, on the relation between glaucoma and smallness of the cornea, which he finds associated with a small globe without corresponding diminution in the size of the lens, so that the latter is large relatively to the eye. A valuable paper on Secondary Glaucoma after Extraction of Cataract is furnished by Mr. E. Treacher Collins, based on careful pathological examination of ten eyes, in all of which there was obliteration of the filtration angle and adhesion of iris or lens capsule to the cicatrix. The paper is illustrated by some beautifully finished reproductions from photographic enlargements of actual sections. Other noteworthy papers are contributed by Professor Snellen of Utrecht, on New Methods for treating Symblepharon, Ptosis, and Episcleritis; by Mr. Simeon Snell, on the Artificial Maturation of Cataract; and by Dr. James Anderson and Mr. Doyne, on Recovery from Hemianopsia with subsequent necropsies. Many remarkable and interesting cases are recorded, such as Pyæmic Panophthalmitis and Spontaneous Purulent Hyalitis, by Drs. Rockliffe and Berry respectively; a case of Embolism of a Branch of the Arteria Centralis Retinæ, by Dr. Lawford; and of Cystic Detachment of the Retina, by Dr. Tatham Thompson, all illustrated by lithographic plates.

The Royal London Ophthalmic Hospital Reports. Vol. XIII., Part 1, December, 1890. Edited by R. MARCUS GUNN, M.A., F.R.C.S. London: J. & A. Churchill.—This part contains a memoir by Dr. George A. Berry, in which he discusses the theories of fundamental colour sensation, and points out the difficulties of their application to cases of colour-blindness. He goes so far as to ask, Is there any good reason for assuming that there are any fundamental colour sensations at all? and thinks the colour sensations run into one another continuously. Practically, he believes the ordinary test for colour-blindness by making the subject match colours is completely satisfactory for the detection of colour-blindness. Dr. Lawford and Mr. Collins publish some notes on Glioma Retinæ, with a report of sixty cases; and Mr. Collins adds two valuable memoirs on the Pathology of Intra-ocular Cysts, illustrated by several woodcuts; and a second on the Development and Abnormalities of the Zone of Zinn. Dr. Tatham Thompson gives a note on Förster's Artificial Ripening of Cataract; and lastly, Mr. Lang advocates the division of anterior synechiæ, which he thinks would prevent the occurrence of many cases of secondary glaucoma.

The March number of the *Veterinarian* contains papers of more than usual interest. They comprise an interesting address by Prof. McCall on "Are Blisters Hurtful or Beneficial in Acute Diseases of the Chest?" which, with the discussion that follows, gives some idea of the stages through which the blister and counter-irritation theory has passed in arriving at its present modified stage; a note on Texas Fever; a paper reprinted from the *Philadelphia Medical News* on the Production of Immunity with the Chemical Substances formed during the Growth of the Bacillus of Hog Cholera, by E. A. v. Schweinitz; and a number of notes on the disease of animals reprinted from other journals. The number also contains reports of the National Veterinary Association, the Royal Agricultural Society of England, and the Lancashire Veterinary Medical Association, at the first of which a paper on Soundness and Unsoundness in Horses was read, which will be of interest to more than members of the veterinary profession, although, as might be expected, veterinary surgeons, even amongst themselves, cannot agree as to the meaning of the term "soundness." Perhaps it should be said rather that there seems to be no concurrence of opinion as to what a sound horse really is, and how far slight malformations or other abnormalities really interfere with the working value of an animal.

Analytical Records.

THE LOCH NESS BLEND WHISKY (EXTRA OLD).

(A. GRITTEN & CO., E.C.)

THIS is a whisky which is soft and mellow to the taste, and evidently a well-matured spirit. Our analysis yielded: absolute alcohol 41·55 per cent. by weight, 49·02 per cent. by volume, equal to proof spirit 85·90 per cent.; extractives 0·25 per cent.; mineral matter 0·09 per cent. The black reaction with perchloride of iron would serve to indicate further the "extra age" of this evidently choice blend.

COCOA EXTRACT.

(ABBOTT & BARRETT, NEPTUNE WORKS, LOWESTOFT, AND 47, MINORIES, E.)

Petroleum ether extracted from this preparation 25 per cent. fat, so that probably more than half of the original fat in the raw product has been carefully removed. This treatment, while it increases the proportion of nourishing as well as the stimulating constituents, theine and theobromine, renders the cocoa more agreeable and more digestible. The flavour of the decoction is excellent. Mineral matter 4·24 per cent.

SAUMUR CHAMPAGNE "BRUT ROYAL" (38*s.* DOZEN).

(ACKERMAN-LAURANCE, 41, CRUTCHED FRIARS, E.C.)

A good, wholesome, and exhilarating wine, with taste somewhat sweet, but equal to many champagnes at twice the cost. Alcohol by weight 10·77 per cent., by volume

13·34 per cent.; extractives 3·13 per cent.; mineral matter 0·10 per cent. (The mineral matter was tinged a light brown, from the presence of oxide of iron.)

UNG. EMOLLIENS AND UNG. EMOLLIENS ANTISEPTICUM.

(ELTON & CO., 28, ENDSLEIGH-GARDENS, EUSTON-ROAD, N.W.)

We are able to confirm, as far as can be judged from a chemical examination, the statement that ung. emolliens is a neutral, pure, and well-prepared fatty cream, and therefore well adapted as a basis for ointments. Ung. emolliens antisepticum is delicately scented, and contains a well-known antiseptic in conjunction with a preparation of zinc. The many applications to which preparations of this character may be advantageously put will suggest themselves to every practitioner.

PAPAIN PEPTONE.

(B. KÜHN, 36, ST. MARY-AT-HILL, EASTCHEAP.)

This preparation is very interesting from a chemico-physiological point of view. It is the body obtained on peptonising beef albumen with papain, the vegetable pepsin. Papain peptone is a brown spongy mass, soluble in water, the solution possessing a somewhat insipid taste, which, however, is improved considerably by the addition of salt. According to our experiments nitrogen is present to the extent of 14·67 per cent., which, adopting the factor 6·3, represents so high a proportion of albumins as 92·42 per cent., of which, as we have verified by actual tests, the greater proportion are uncoagulable and soluble; that is to say, in the form of peptone and albumose. Glue peptone occurs only to a traceable extent. Papain peptone seems likely to prove a valuable adjuvant to food for the debilitated, and it may obviously be employed to increase the nourishing value of many kinds of ordinary food.

HORLICK'S MALTED MILK: A SUBSTITUTE FOR MOTHER'S MILK.

(THE MALTED MILK CO., RACINE, WIS., U.S.A., AND 39, SNOW-HILL, E.C.)

The action of diastase, whether it be that derived from barley or other cereals, is by no means limited to starch, which under its influence undergoes transformation into dextrin and sugar. It is well known that in trustworthy preparations of cod-liver oil and malt the oil does not exist in the free state, but in the condition at present regarded as an emulsion, and, as is shown by the microscope, immediately on the addition of water oily globules are seen to separate. The precise nature of this action of diastase does not appear to have received much attention. From recent experiments it would also seem that diastase acts in such a manner upon the casein and albumen of milk as to render these bodies uncoagulable by acids. Surely this is a subject which recommends itself to the attention of investigating chemists. Advantage has already been taken of this property of diastase by the Malted Milk Company. They are introducing a preparation of dry malted milk. During the process of manufacture they regard the casein of milk to be so acted upon by the diastase as to become partially predigested, for experiments show that on mixing active malt with milk and maintaining the mixture at blood heat for a few hours the casein is rendered uncoagulable by acids. The company's own account of the composition of the dry powder which they prepare is given in the following table:—

	Water.	Sugar.	Dextrin.	Fat.	Albuminoids.	Ash.
Malted Milk (Company Analysis)..	3·27 %	46·63 %	17·16 %	6·78 %	22·26 %	3·90 %
Malted Milk (THE LANCET Analysis)	2·21 %	63·59 % (and dextrin)	——	8·40 %	21·85 %	3·95 %
Human Milk..	4·00 %	46·78 %	——	23·39 %	23·39 %	2·44 %

The analysis made in our laboratory substantially confirms this, and it will be seen that chemically the composition of malted milk resembles that of human milk (for which it is offered as a substitute), supposing all but 4 per cent. of water had been removed. Important differences, however, consist in the presence in the prepared milk of a less quantity of fat; while, of course, the dextrin owes its origin entirely to the malt. The flavour of malted milk is excellent, and it will be interesting to watch the results accruing from the practical use of this product, which is likely enough to prove an important contribution to food-supply.

LIQUOR CARNIS.

(THE LIQUOR CARNIS COMPANY, LIMITED, 50, HOLBORN VIADUCT, E.C.

We have already had occasion to examine this excellent preparation. Liquor carnis is now flavoured with a "dash" of celery, which gives it a very pleasant taste. That this in no way interferes with the admirable condition in which the meat juice is preserved in the cold is evident from the fact that the simple experiment of boiling resulted in the coagulation of the fluid.

KOLA WINE AND KOLA BITTERS.

(T. CHRISTY & CO., 25, LIME-STREET, E.C.)

Messrs. Christy, who we think were the first to introduce the kola nut to this country, have recently succeeded in preparing a wine and a "bitters," which contain in a wineglassful the equivalent of thirty grains of kola. The port used in the preparation of the former is, judging from the taste, of no inferior kind; while the "bitters," which does not require to be mixed with anything else, possesses a pleasing flavour, that of orange predominating. The alkaloid caffeine was readily extracted with chloroform. Further analytical results are as follows:—Kola wine: Alcohol, 17·00 per cent. by weight; 20·89 per cent. by volume; extractives, 8·72 per cent.; mineral matter, 0·32 per cent. Kola bitters: Alcohol, 20·58 per cent. by weight; 25·17 per cent. by volume; extractives, 9·90 per cent.; mineral matter, 0·20 per cent.

PEPSALIA.

(G. & G. STERN, 62, GRAY'S-INN-ROAD, W.C.)

This preparation, which has been examined previously, has also undergone improvement in manufacture. It is evident that the colour is a purer white, the salt is more uniformly grained, and the digestive agent more active than before. Glycerine we find readily extracts the digestive agent from the salt, and the extract so obtained quickly transforms hard white of egg into soluble albumins.

NATURAL MINERAL AND AERATED WATERS.

(RICHARD DAVIS, 20, MADDOX-STREET, REGENT-STREET, W.)

All the samples submitted to us indicated careful preparation and the employment of good materials. There was a remarkable absence of organic matter, and no trace of injurious metals, as lead, tin, or copper. Analysis gave the following results:—Soda water, 17½ gr. of the bicarbonate to the pint; lithia water, 9 gr. of the carbonate to the pint. Tarasp water: Total solids, 1165 gr. per gallon; chlorine, 158·6 gr. per gallon; magnesium and sodium present in large proportion, with smaller quantities of calcium, potassium, and lithium, combined with chlorine, bromine, sulphuric, and carbonic acids. Tarasp is pleasant to taste, and it contains its own volume of free carbonic acid gas.

The lithium was readily detected by the spectroscope, but it may possibly be of interest to those who drink lithia water to mention that the presence of the metal is easily made manifest by merely dipping the wire of the bottle into the water and then holding it in the transparent part of a common gas flame. Lithium is indicated by the carmine colour imparted to the flame as the liquid vaporises.

New Invention.

CONVERTIBLE VAGINAL SPECULUM.

THIS speculum is a modification of the bivalve variety, and can be used either as an expanding instrument, or

as a retractor after the manner of Sims's "Duckbill." The joint is of a simple character and is very easily disconnected, so that it can be thoroughly cleaned—a very important point in gynæcological instruments, and one not always kept in view. We have used the instrument and find it very efficient. The figures show how one blade of the instrument is placed at right angles to the other and fixed with a small catch, when it may be used to draw back the posterior vaginal wall. It is made by Messrs. Mayer and Meltzer, Great Portland-street, W.

VIRCHOW TESTIMONIAL FUND.

THE following additional subscriptions have been received:—

	£	s.	d.
P. W. Latham, M.D. ..	2	2	0
George Johnson, M.D. ..	1	1	0
W. L. Reid, M.D.	1	1	0
Charles Workman, M.D...	2	2	0
James Finlayson, M.D. ..	2	2	0
Alex. Robertson, M.D. ..	1	1	0
Joshua Paterson, M.D. ..	2	2	0
J. K. Kelly, M.D.	1	1	0
James Lawrence, M.D. ..	1	1	0
James C. Howden, M.D...	1	1	0
William Frew, M.D.	1	1	0
Sir G. H. B. Macleod, M.D.	2	2	0
George Heron, M.D.	1	1	0
Joseph Coats, M.D.	2	2	0
Johnstone Macfie, M.D. ..	1	1	0
John Lindsay Steven, M.D.	0	15	0
John Cleland, M.D., LL.D., F.R.S.	1	1	0
J. Kingston Fowler, M.D.	1	1	0
J. Langdon Down, M.D.	1	1	0
R. Farquharson, M.D., M.P.	1	1	0
G. H. Savage, M.D.	1	1	0
H. Radcliffe Crocker, M.D.	1	1	0
F. Roberts, M.D.	1	1	0
R. Thorne Thorne, F.R.C.P., F.R.S.	1	1	0
Thomas Reid, M.D.	1	1	0

VACCINATION AND SMALL POX.

To the Editors of THE LANCET.

SIRS,—During a voyage on the South-west Coast of Africa an outbreak of confluent small-pox occurred on board among the black passengers, resulting in some deaths. Owing to native prejudice some difficulty was experienced in persuading them all to undergo vaccination. However, after one death had occurred, the few who had rejected vaccination presented themselves for it. Among these was a well-made muscular negro, a native of Monrovia. He complained of vague pains in the back and limbs, slight headache, and chilliness; his pulse was 100 per minute, and his temperature 100·5°. The bowels were confined; no papules could be felt in the skin. Fearing that he was about to develop an attack of small-pox, he was vaccinated in four places in the upper arm, and given ten grains of calomel, together with a diaphoretic mixture, containing five grains of quinine, which was given every four hours. In addition to this he was isolated. For the two following days he remained in much the same condition, and on the third day the site of vaccination presented three well-defined papules. During the day the patient became much worse; he vomited twice, complained of great frontal headache, and lumbar pain. In spite of the administration of ten grains of calomel the previous evening, the bowels were confined. The temperature was slightly raised (to 101°), and the pulse full and bounding, the tongue being thickly furred. He was given a mixture containing hyoscyamus and bromide of potassium every three hours. The next day the patient was better; the headache had diminished, the pains in the back were less, and the bowels had been moved freely. In the meanwhile the vaccination was steadily advancing, the papules having increased in size, and the upper arm being slightly swollen. The medicine was continued every four hours, and the patient slept most of that day and passed a good night. On the following morning he complained still of some headache and vague pain, but his temperature was normal, the pulse natural, and the patient apparently well. He complained of some pain in the right axilla, which was due to enlarged glands in that situation caused by the vaccination. He was practically well on the day following, complaining of nothing but his arm, which was slightly inflamed, swollen, and painful on movement. In a few days he was allowed to go back to his work; he kept in good health and the arm matured well, vaccination being successful in three out of the four situations operated on.

I have given the above details in order to point out what seems to me the efficacy of vaccination in arresting the development of small-pox. The severe symptoms which appeared on the third day were, to my mind, those of the onset of variola, as they exactly resembled those presented by the cases which developed the disease. I may add that, although we had more than 100 black passengers, the majority of whom had never been previously vaccinated, the disease did not attack any who had undergone the operation. Of course, such cases of small-pox as did arise were rigorously isolated, and due antiseptic precautions were taken. As this, however, was not done until they were taken ill, some risk of infection must have been run by their fellow-passengers; and, as everyone knows who has been in countries inhabited by black races, small-pox is the most terrible scourge that can well be imagined, decimating whole tribes, and sparing neither young nor old. Therefore no immunity on the score of race can be pleaded on behalf of negroes. Owing to the rare occurrence of the disease in a severe form in England, we do not, I think, often realise the fearful ravages which this disease can effect both in loss of life and in the appearance of individuals. On this account we are, perhaps, inclined at times to undervalue the immense importance of vaccination, the benefits derived from which were vividly brought before both myself and my white companions during the voyage I mention.

I remain, Sirs, yours truly,

F. M. MANGAN, M.R.C.S., L.R.C.P.

Fairholme-road, West Kensington, W., March 31st, 1891.

THE LANCET.

LONDON: SATURDAY, APRIL 4, 1891.

READERS of the reports of the proceedings of the Council of the Royal College of Surgeons of England can rarely find therein any indications of progress in the direction of a reform of the peculiarly close constitution of that important and influential corporation. The rays of light which are occasionally emitted from the Council chamber are often intercepted by an official diaphragm before they can reach the outer world, and Fellows of the College are left to infer that the Council as a whole are a united body unanimously in favour of upholding the best of all possible constitutions at the best of all possible colleges. It is not practicable, however, to shut out every gleam, for the most careful revision of the proceedings of the Council could scarcely be so stretched as to exclude the report of important motions carried by a majority of the Council. Such a motion was that which was made on March 12th by Mr. THOMAS SMITH in pursuance of notice given a month previously, "that the proceedings of the Council in relation to the scheme for the reconstitution of the University of London be placed before a meeting of the Fellows and Members summoned for the purpose, and that the date of the meeting be determined by the President and Vice-Presidents." This motion was seconded by Sir W. S. SAVORY, and carried by a majority of 16 to 5. Considering that the scheme to be submitted for the consideration of the Fellows and Members has already been virtually settled, and is not likely to be materially modified by anything said or done at the general meeting, the adoption of this motion does not appear at first sight to be any considerable step in advance, but that it is of some importance may be inferred from the facts that five members of the Council opposed it, and that the Association of Fellows had urged upon the Council the desirability of calling the Fellows together to consider any scheme of reconstitution of the University before its final ratification. When it was pointed out by the Attorney-General and Mr. PAGET that at the present moment, when an action by the Members of the College is pending, it would be undesirable to call together the Fellows separately, the Committee of the Association passed a resolution in favour of convening a general meeting of Fellows and Members. This step, therefore, is in harmony with the opinions of those who are recognised advocates for a reform of the constitution of the College, and is emphatically a step in the right direction. One of the fundamental articles of the Association was "that it is desirable that no alteration in the constitution or relations of the College shall be effected without the consent of the Fellows and Members convened to discuss such alteration," and this was rejected by the Council of the College in the spring of 1884—a rejection which led to the formation of the Association of Fellows and the Association of Members. Had the resolution been accepted it is extremely doubtful whether either Association would have come into existence, for it was the most important of the four resolutions proposed by Mr. PAUL SWAIN on March 24th, 1884, and adopted at the general meeting then held in the theatre of the College. We are, therefore, inclined to regard the success of Mr. THOMAS SMITH'S motion as indicative of a gradual approach on the part of the Council to an agreement with the very moderate and rational programme which the Association of Fellows is engaged in supporting. It would have been better to have called the meeting sooner, but it is better now than not at all, for the scheme of reconstitution of the University of London has not yet been before Convocation, and when it is discussed by that body it is most likely to be rejected. A further approach to an agreement with the reforming section of the Fellows does not appear upon the face of the official record, for the ray of light was intercepted in its passage. The deputation from the Association of Fellows which waited on a committee of the Council last November pressed for a simplification of the method of voting by voting papers, and their proposals were referred to a special committee of the Council, with the ultimate result that no change was made. An ordinary reader of the published minutes would probably imagine that the Council were unanimously of opinion that the present plan was the best that could be devised, but it is an open secret that the Council were divided in opinion, and that the determination not to comply with the reasonable requests of the deputation from the Association of Fellows was only ratified by the smallest possible majority. Mr. MITCHELL BANKS strongly supported the proposals of the Association of Fellows, and urged the Council to accede to them, thus showing that his adhesion to the programme of the Association as set forth in their recently issued report was substantial and sincere. This is in the highest degree satisfactory, for it shows that his return by a large majority at the head of the poll last year and the failure of the candidates supported by the Association of Fellows did not signify any reactionary movement or any opposition to reform on the part of the constituency, and that this return can be claimed as a victory for the reforming party among the Fellows.

Looking at the political situation as a whole, we are satisfied that it is distinctly favourable to steady constitutional development. By the persistent action of the Association of Fellows, to whose steadfastness in a good cause the Fellows of the College generally are indebted for the progress that has been made, it has been conclusively settled that the Council has the legal power to call separate meetings of Fellows if they are so minded, and we feel sure the change must come shortly. The simplification of the method of voting by voting papers advocated by the Association, and lost by a bare majority, will be carried the next time that it is proposed in the Council. Consultation of the constituency as to changes in the constitution and relations of the College is in the ascendant, and will not be neglected hereafter. The reforming element of the Council is being strengthened, and so soon as it receives the smallest reinforcement the whole fabric of obstruction to moderate

and necessary measures for investing the Fellows and Members with a larger share in the management of the College will "dissolve, and, like an insubstantial pageant faded, leave not a wreck behind."

THE subject of Provident Dispensaries is coming powerfully to the front in connexion with the acute criticism which is being brought to bear on the out-patient department of hospitals. The result of all investigations of a searching character into the out-patient department is to show that it is greatly abused by persons who are not ill enough or poor enough to need the paraphernalia and the gratuitous aid of a great charity. These persons will have to be excluded if medical charities are to continue to receive the support of the benevolent. And if they are to be excluded means must be provided for their treatment on independent, though at the same time practical, terms elsewhere. This is the problem before the public, and especially before the profession. Those who crowd the out-patient department cannot do without medical aid. It is perhaps natural that they should go to the out-patient department, where they expect to get for nothing the advice of consulting surgeons and physicians. But this is a use of medical charities that was never contemplated, which has become demoralising to the people and highly injurious to the profession. The problem is to devise an alternative that shall preserve the independence of the people and have some regard to the interests of the medical profession. For, after all, it is the private members of the profession in general practice on whom the burden of all onerous sickness of the working classes falls. They have to be on duty night and day, to face infection in the close apartments of the poor, and to be their neighbours and friends in every emergency.

The general remedy suggested for hospital abuse is the Provident Dispensary. Whether in London, Birmingham, Manchester, or elsewhere, these institutions are not only lauded, but they seem to answer—to meet in a certain degree the wants of the case of those who are pronounced by general consent to be unfit for hospital relief. We have before us the annual reports of two or three of these dispensaries, and some of them betray obvious expectations that these institutions are destined to fulfil a great function in connexion with the movement for hospital reform, in the way of affording facilities for the working classes being attended on independent principles. However this may be, some of these institutions seem to thrive well. In Manchester there are nine dispensaries in connexion with the Manchester and Salford Provident Dispensaries Association, with a membership of 24,000. The subscriptions of members amount to £4107, and they pay their medical officers £2372. Only one of the branches is not self-supporting. The rest show a profit of £482. The chairman put forth a very just suggestion that the time was coming—we should say had come—when the medical staff should share more largely in the profit of the dispensary. It is claimed that in Manchester hospital abuse has been almost abolished by a system of investigation and by the provision of these dispensaries. The report of the Northampton Royal Victoria Dispensary is also before us. The members number 20,000, or one-third of the population. The increase in membership in the last year was 981 and that of free payments £315. The total receipts, including a balance in the treasurer's hands at the beginning of the year of £1792, were £5270 12*s.* 9*d.* The amount paid to the medical men for the year 1890 was £2481 16*s.* 4*d.* The largest sum paid to one medical officer was £1048 19*s.* 4*d.* This seems a large sum, but it represents 20,000 visits at the houses of patients, 10,150 interviews with patients at the doctor's house, and 642 at the dispensary—in all, 31,142 attendances! There are five medical officers in all. It is claimed in the report that only eligible persons are admitted and that a large number anxious to join are excluded. Another report before us is that of the Hockley Provident Dispensary. Mr. LAWSON TAIT presided over the annual meeting and expressed his conviction that the only effective method of dealing with the sick poor was by provident dispensaries. The establishment of such institutions was the only practical solution of the difficulty. In the last year 670 new members had been admitted. The total membership was 1800; the income £614 16*s.* 3½*d.*

Such are favourable specimens of the provident dispensaries, and such are the favourable accounts of them by their promoters. We heartily recognise the good they do, and we cannot fail to see that such institutions are looked to for much service in the immediate future. It is well, however, to remember that they have their critics. Their friends will do well to consider the criticism for what it is worth, and to meet obvious objections in a friendly spirit. A letter before us complains that in Northampton tradesmen are admitted, and others in good circumstances. Moreover, that dispensary patients are seen by qualified assistants, and not by the gentleman nominally doing the largest dispensary work, who, by the way, is said also to do the largest private practice in the town. Our correspondent characterises the appointments as a monopoly, enjoyed by "the favoured, subsidised few," and that the enormous amount of work done for a small sum borders closely on "the sweating system." A correspondent at Greenwich complains with much reason of the wholesale distribution of handbills advertising the Greenwich Provident Dispensary and the names of the medical staff. In the Manchester dispensaries we believe there is no wage limit, and, if we mistake not, it was abolished at the instigation of the Manchester Medico-Ethical Society. Surely here we have a proof of the want of some thorough understanding and agreement in the profession at this juncture. The great body of the profession is complaining, and justly, of the competition of the out-patient department. But there is no agreement of opinion to be found as to the substitutes for it, which must be organised and ready. If the Lords' Committee come to conclusions similar to those of the Birmingham Committee, and the profession is unprepared and divided on the question of substitutes, the result will be an indefinite lease to the out-patient department. We think there should be a wage limit and a strict inquiry into the circumstances of patients. Moreover, there should be a determined effort on the part of the promoters of provident dispensaries to make the remunera-

tion of medical men more proportionate to the nature and amount of their work, and to include in their scheme the largest number of the practitioners of the town. With these precautions—and these are absolutely imperative—the provident system should have the hearty support of all who are battling for the reform of hospital abuses. It is easy to find fault with such a scheme as the Northampton Dispensary. But it is more difficult to imitate it or to excel it. We would ask those who oppose such institutions to consider the miserable substitutes for them in the shape of cheap dispensaries and coöperative medical associations, in which a young and impecunious medical man is induced to undertake a herculean task of work for a pittance that would not pay a respectable mechanic.

WITHIN recent years the bacillus pyocyaneus has attracted considerable attention both in France and in this country; first, because of the beautiful colour to which it gives rise and its characteristic appearance and manner of growth under certain conditions; secondly, because of its action on certain animals; and thirdly, because when either the bacillus (CHARRIN) or merely its products (WOODHEAD and WOOD) are introduced into the body, it seems to interfere in a most remarkable manner with the development of the anthrax bacillus when simultaneously inoculated. M. C. GESSARD[1] has again concentrated our interest on the bacillus itself, and in a series of experiments has been able to show that the surroundings of the micro-organism, or the conditions under which it is developed, may so far modify the manifestations of its activity that it actually seems to become developed into a distinct organism, and that we have in such cases not merely a varietal difference, but even a species or *race* difference. He gives a definition of *race*, based on that given by PASTEUR in his studies on beer, who takes as the basis of his classification not outward form resemblances, which can often obscure marked differences, but the physiological functions, which are far more important in distinguishing the races than are most morphological characters.

M. GESSARD finds that by growing the pyocyaneus bacillus on bouillon he is able to obtain both pyocyanin and green fluorescence; and that if the growth is continued on this nutrient medium, both of these functions may become so strongly developed that, even when removed from the medium, the organism still retains these functions in a most remarkable degree. If, however, it be cultivated for a number of generations on egg albumen, the green fluorescence is lost, and it takes some little time to regain the power of giving rise to this appearance when again grown in broth. On the other hand, gelatinised peptone meat infusions allow of the production of the pyocyanin and not of the fluorescence, although another greenish pigment is always formed. On the addition of glucose to this latter medium even the pyocyanin ceases to be developed, and we have then only the greenish pigment above mentioned. On passing this organism through a rabbit it is found that the pyocyanic function is lost, and even on cultivation in broth outside the body a considerable number of cultures have to be made before it again obtains this power of forming pyocyanin, although the fluorescent function may still remain. The importance of such facts as these is very great, as we have gross optical demonstration of the modifications of the functions of the bacillus due to its cultivation on various media, to the action of heat, and to the passage of the organism through the animal body. There are a number of other organisms which, treated in the same way, become similarly modified. It is always difficult by mere chemical processes to determine how far the products and functions of such organisms have become altered, whilst in the case of passage through animals so many sources of fallacy may creep in that it is extremely difficult to avoid doubt that the results obtained exist in the mind of the experimenter rather than in actual fact. Where, however, the changes can be followed with the eye, and where in consequence a large number of experiments may be carried on and observed in a very short time, we are able to secure much more satisfactory and convincing proof of function modifications; and we feel emboldened to accept more freely the results obtained by the more delicate methods, especially when these can be confirmed by the coarser ones resorted to by M. GESSARD. It is easier to understand how pathogenic organisms—at first comparatively benign—may on passage through several individuals attain a virulence so great that almost every patient attacked by a disease succumbs; whilst in the same way the passage through successive human or animal bodies may so modify the activity of another organism that the attacks of the disease become gradually less and less severe. The passage of anthrax or hydrophobia, for example, through one series of animals gives rise to an attenuation; whilst the passage through another series increases the activity of the virus to such a degree that it almost invariably proves fatal. Similarly, we know that organisms growing on different media give rise to different products; for instance, the bacillus prodigiosus forms a beautiful pigment when growing at certain temperatures on proteid substances, whilst growing on sugar it gives rises to the formation of lactic acid. From this it may be readily understood how other organisms, ordinarily not specially dangerous, when placed in favourable nutrient media outside the body, may develop powers and activities that render them most dangerous to the public health. Further, however, it must be remembered that these organisms act and react one upon another. Of this we have an admirable example in the growth of an innocuous pseudo-diphtheria bacillus within the cavity of the mouth. We find that it may attain certain degrees of virulence, but that the virulence is developed to the highest degree only in those cases where there is present also a micrococcus or streptococcus similar to that of erysipelas, which by its presence appears to prepare the ground, and perhaps even the food, for the development of special toxic substances by the diphtheria bacillus itself. A number of facts bearing on these points will gradually be accumulated, and eventually we may arrive at some general conclusions or obtain some reliable guide as to the means by which these modifications are brought about or determined. For the present we must accept

[1] Des Races du Bacille Pyocyanique: Annales de l'Institut Pasteur, Tome v., No. 2, 1891.

M. GESSARD'S most remarkable facts as an indication of the lines along which future work will have to be carried on.

THE most important step in the history of the Birmingham School of Medicine since the conferring on it of the title of Queen's College by Royal Charter in 1845 was taken on the 20th ult., when the amalgamation of Queen's and Mason Colleges was agreed to with only one dissentient—viz., Sir JAMES SAWYER. Mason College has for the past ten years supplied the necessary scientific teaching for the medical students of Birmingham which could not be so efficiently rendered by the older college, and now the disadvantages of a dual control and an attendance on two institutions for a proper curriculum will be removed. There can be no doubt as to the wisdom of this decision, and, with characteristic vigour and determination, the requisite steps for presenting a petition to the Chancery Division praying for the approval of the new scheme have been already taken, whilst the plans for a new building behind Mason College, which is to accommodate the medical students with class-rooms for the medical lectures &c., have also been prepared. The amalgamation will remove from the authorities of Mason College all temptation to become a complete school of medicine in itself, and will secure for the students of Birmingham a security of scientific education which might at any time previously to this union have been taken from them if the professors at Mason College had wished to exclude Queen's College students from their class-rooms. Sir JAMES SAWYER opposes the destruction of an old foundation, but the progress of the scientific element in recent medical education, especially in the curricula of universities, makes it incumbent on all medical schools to form a thoroughly scientific side among their professors, or to enter into an alliance with a college of university standing for the provision of this scientific instruction. The closer the union the better for the student and the teacher. Such an amalgamation, far from being a destruction, is really but a further development, especially if the union is to the advantage of both Colleges. We look upon this fusion as the first great step towards the formation, at no very distant date, of a university in the Midlands, which will emulate in good work the Victoria University, if not some of the older foundations. Local universities are among the most potent forces at work in the elevation of the higher education throughout the country, and we have no doubt that a fully equipped teaching university will soon be desired by the citizens of the Midlands, and be secured for their children. Whether the department of Theology, which will remain to Queen's College after the removal of its Faculty of Medicine, should be continued at Birmingham or removed to Worcester must be decided by the support afforded to it by the Churchmen and inhabitants of Birmingham. This is a local question. The future of the Birmingham Medical School, of the Medical Department of Queen's College, and of Mason College is of importance to everyone throughout the kingdom who is interested in the due development of medical and scientific education, and in the adjustment of their proper relations to each other.

Annotations.

"Ne quid nimis."

HER MAJESTY'S VISIT TO GRASSE.

THE eagerness of competition extends, it would seem, to localities and towns, and a knowledge of this fact will cause some hesitation before accepting absolutely all that has been said about the town of Grasse, which is now being honoured by a visit from the Queen. The question which has been asked, with a purpose as it would seem, "Is Grasse healthy?" admits of a ready answer. The situation of the hotel which the Queen occupies at Grasse is perfect. It is well protected from the north, is 1100ft. above sea level, and has a view of plain and sea and mountain such as can scarcely be excelled in Europe. The air in such a place must be pure, and it goes without saying that Her Majesty's advisers are satisfied as to the purity of the water which the Queen will drink, and the soundness of the sanitation of the house which Her Majesty inhabits. That the old town of Grasse is not calculated to impress the traveller as a place the construction and sanitary arrangements of which are in any degree perfect is of course true; but the Queen will incur as little risk from the old town as Her Majesty does from the slums of Westminster when inhabiting Buckingham Palace. It must be admitted that the old towns along the Riviera are none of them inviting, and must be regarded as a menace to the health of visitors. The old towns of Hyères, Frejus, Cannes, Nice, Eza, Rocca Brunna, San Remo are all pretty much alike—crowded, ill-paved, malodorous; but as the new towns where the visitors congregate are more or less removed from the old ones, those who visit these spots for health or pleasure take no harm. In one respect Grasse is better than its neighbours, inasmuch as the custom has long prevailed there of applying all organic refuse to agricultural purposes, instead of allowing it to foul the foreshore, as is done at all the so-called "health resorts" upon the coast. The argument has been used that inasmuch as Grasse is a place of great antiquity, the soil must have become impure; but such an argument shows a great want of knowledge of elementary biological principles. The ground round Grasse is highly cultivated, so that the impurities of Grasse become in due time violets, roses, jasmine, and orange blossoms; and it is a well-known fact that the more highly land is cultivated the more readily will it eat up, as it were, the impurities which are applied to it. With regard to the earth, the Shakesperian saying, that "appetite doth grow by what it feeds on," is strictly true; and it may be hoped that those who visit Grasse may not be too prejudiced to bring away maybe a useful and thrifty lesson in sanitation from this old city of Provence.

THE MEDICAL MORTALITY RATE.

IN our correspondence column to-day will be found an interesting letter from Dr. Glover Lyon on this subject, in which the attempt is made anew to elucidate the question of mortality in the medical profession. The results so brought out conform much more nearly to what we conceive to be the facts of the case than did Mr. Chatham's figures, which we recently criticised. But Dr. Glover Lyon's method seems to us open to objection, and from two opposite points of view. The method is to take the claim register of an insurance office and search through it until a medical man's claim is found, then to note the age at entry of the life assured, and, as we understand, *to continue* the search until a non-medical claim is discovered arising upon a life

which was entered in the company's books in the same quinquennium of age and approximately at the same date as the medical case already discovered. The result is that the non-medical policies are found to last slightly longer than the medical ones. Now it is clear that the method of selection precluded the possibility of any great divergence between the two classes of policies because the date of death and date of entry are taken approximately the same, and the ages are taken within the same quinquennial groups. It might happen that these precautions should prevent the true disparity from becoming apparent. But, on the other hand, if, as we understand, the medical case were *first found*, and then a non-medical companion case was looked for *further on in the register*, it would follow that the non-medical cases would have had a process of—perhaps unconscious—selection applied to them the tendency of which would be to give them an *a priori* advantage over the medical cases, since, other things being equal, the later entries must represent policies of longer duration than the earlier. We should be interested to know what would happen to Dr. Glover Lyon's figures if instead of *looking forward* for his non-medical claims he *looked back* for them in his registers, and so gave to the medical policies the advantage which the method as it stands appears to give against them.

PREHISTORIC TREPHINING IN PERU.

THE antiquity of trephining has formed a frequent topic for the medical historian, and many skulls have been produced from caves in France, the Canaries, Algeria, Mexico, and Peru, which bear evidences of having undergone the operation during life. M. Broca has written a good deal on the subject,[1] also Dr. Prunières of Toulouse,[2] who discovered some of the specimens. There does not seem to be any doubt that the European specimens really represent a rude surgical operation, for in many of the cases the edges of the bone are rounded as if the individual had lived for some considerable time after the operation. Less, however, would appear to be known about the Peruvian trephining, as the accounts existing in medical literature are apparently limited to a description of a single specimen by Broca and Nott. A very interesting paper has, however, now been published in *La Crónica Médica* of Peru, by Dr. A. Lorena of Lima, with drawings of four skulls, which, however, are only intended to serve as specimens of several hundred similar ones in the old tombs of Calca and Pomancanchi in Silque. Although Dr. Lorena does not seem to hold any strong views on the origin of the trephine holes, he thinks it very doubtful whether they were made by a surgical operation, though the beveling and notching may have been done by some rude instruments—perhaps with some reference to the fitting of an obturator plate of lead, silver, gourd, or other substance, such as is not uncommon at the present day in some parts of South America. It is suggested that syphilitic disease, which is known to have been very common in the time of the Incas, notwithstanding their severe moral laws, may have caused the perforations, or some of them. It would appear that the venereal origin of some kinds of disease was pretty well known, for a small statue has been preserved representing a man covered with tumours and deformities, the supposed nature of which is sufficiently indicated by the figure of the phallus engraved on the surface. Another explanation possible is that the skulls were injured by weapons. A third may also occur to those who are acquainted with the diabolical cruelty of Indians—viz., that the holes in the skulls may have been chiselled or burnt out as a species of torture. The objections to the theory of surgical trephining is that the Incas seem to have had no knowledge of boring instruments, and that the operation, if such it were, must have been an exceedingly common one judging from the numerous skulls that are found with holes in them. Again, it is known that the Incas were too timid and probably too superstitious to open the abdomen for the purpose of taking the viscera from a dead body for embalming, practising instead the dragging of the intestines &c. through the anus, so that it hardly seems probable that they would have ventured to cut open the skull in the living subject. Of course, amongst these people, as amongst others where it is more certain that holes have really been chipped, scraped, or drilled into the cranium by barbarous surgeons, the idea probably was to provide an outlet for the evil spirits which were supposed to cause headaches or other diseases. In one of the skulls with two apertures there is between these a kind of pit in shape something like the cells of a wasp's nest, which gives one the impression that the operator after making a commencement there thought better of it, and began again at a little distance. Two of the specimens figured present two apertures, and two one only. Five of the holes are approximately circular, and are in the parietal bones; the sixth, which is very irregular, probably from pathological processes, is in the occipital bone. Most of them are beveled at the expense of the outer table, and one is crenate, as if the edge had been filed with a cylindrical file or cut with a boring instrument, there being sixteen arcs in the circumference. It is possible this may have been done after death, with the intention of making an amulet.

[1] See THE LANCET, vol. ii. 1887, p. 213.

[2] See a letter from Mr. Blaker of Burgess-hill, in THE LANCET, vol. ii. 1883, p. 881.

PROPOSED DEMOLITION OF AN INSANITARY AREA AT BRIGHTON.

A PUBLIC inquiry has been held in Brighton with a view to securing a provisional order confirming an improvement scheme which the Town Council propose to carry out under the Housing of the Working Classes Act, 1890. Dr. Newsholme, the medical officer of health, has made two representations to the Town Council with regard to the area in question, and before doing so he fully satisfied himself, from the high rate of mortality prevailing in it as compared with the remainder of the borough, and from the nature of the diseases which occurred there, that it was necessary that the area should be condemned in the interests of public health. The houses, a number of which are built back-to-back, are, as a group, damp, dirty, unprovided with sufficient air-space about them, ill-ventilated, and generally defective from a sanitary point of view. They were also reported to be such that no mere alterations or repairs could make them healthy. In some instances the upper storeys had been converted into registered common lodging-houses, whilst the lower portions were let out as private apartments. The objections to the scheme of the Town Council were hardly such as are likely to be allowed to stand in the way of an improvement, which will be an obvious boon to the town, and also, in so far as health is concerned, to those for whom other dwelling accommodation will be provided than that afforded by this unhealthy area.

DANGERS OF SULPHONAL.

ALTHOUGH sulphonal is probably one of the safest, as it is one of the most efficacious, among the hypnotics recently introduced, the series of cases published by Bresslauer of Vienna show clearly that it has certain dangers. The degree of peril is difficult to estimate, as the patients were lunatics, and were also apparently feeble; but the fact is significant that out of seventy-seven patients who were treated with the drug, no less than seven showed serious symptoms, and in

five of those there was a fatal termination. It ought to be mentioned that the patients had been taking the drug for a considerable time in good doses, and had borne it well until symptoms of disturbance set in, these being great constipation, dark-brown urine, slow, or in some cases rapid but feeble pulse, discoloured patches resembling purpura on the limbs, and great prostration. In the cases which ended fatally the cause of death was heart failure, with œdema of the lungs.

AN ISOLATION HOSPITAL SCHEME ABANDONED.

WE regret to learn that a scheme under which joint hospital provision was to have been provided for Enfield, Tottenham, Edmonton, Wood Green, and South Hornsey has had to be abandoned. It appears that opposition before Parliament was threatened by the Southgate Local Board, on the borders of whose district the hospital would probably have been erected; and it was felt that, even if success attended the efforts of the combining authorities, the appeal to Parliament would materially increase the cost. The site appears to be close to the Winchmore Hill Infectious Hospital of the Metropolitan Asylums Board; and it is not easy to conceive how a much less objectionable site, from the sentimental point of view, could have been secured. Indeed, Southgate would probably have been wise to have joined in the scheme, which would, at all events, have given them the use of a hospital which was not within their own district. The result of the opposition is the more serious because there are few suburban areas which stand in greater need of means for the prompt isolation of infectious diseases than those which had to do with this scheme. In fact, they run considerable risk if they remain long as they now are in this respect.

PUBLIC HEALTH AND PROFESSIONAL COURTESY.

A CASE of some difficulty is submitted to our judgment, but as the leading facts complained of have been publicly issued in the form of a report appearing in the local press, we feel that the matter may properly be one for comment by us. The only medical practitioner in Brandon, Norfolk, draws our attention to the fact that the medical officer of health for the Thetford rural sanitary district, having to investigate the circumstances of a diphtheria occurrence, has reported that the occurrence had its beginnings in four cases which, he states, were certified by the Brandon practitioner to have died of "influenza and bronchitis"; that he took this step without ever having seen the cases either before or after death; that in the absence, as he admits, "of any other information of a reliable nature" than a mere localisation of the disease and a record of cases and deaths, he has publicly reported that these attacks constituted the "starting-point of the outbreak"; and that the excessive fatality which attended the outbreak "was mainly due to imperfect medical supervision." And the Brandon practitioner proceeds to ask us whether such action is professional, and whether a medical officer of health has any right to examine cases without the permission of the medical attendant. Dealing with the last point first, we would remark that so far as right is concerned no duty of seeing patients is imposed on medical officers of health, that this can only be done with the assent of the sick or of their relatives, and that it must be regarded as a breach of professional courtesy to take any such action without some sort of communication with the medical attendant of the sick. A medical officer of health should not, without grave cause, undertake to go behind the certificate of notification or of death of another practitioner, and he certainly has nothing to do with the results of treatment and medical care. There may be occasions when an imperative duty is cast upon a public officer to take the step of questioning a diagnosis; and it is at such times above all others that extra caution should be taken to comply with the common rules of professional courtesy. This is the first time we have found a public report accusing a fellow medical practitioner of faulty diagnosis, together with a suggestion of faulty medical supervision; and we sincerely hope that there is, in the original report or elsewhere, something which has been omitted from the printed document, which will clear up a difficulty which is obvious in view of such facts as are before us. The duties imposed upon medical officers of health are at times very delicate, and one of the first conditions necessary to their proper fulfilment is the maintenance of an attitude of strict professional courtesy towards all the medical practitioners in the district which is concerned.

HYSTERICAL FACIAL PARALYSIS.

A CASE, said to be of this nature, was recently communicated to the Société Médicale des Hôpitaux by M. Gilbert Ballet for M. Ed. Boinet of Montpellier. The patient was thirty-one years of age, and when she came under observation was suffering from right facial paralysis of cerebral type—i.e., affecting the lower part of the face, associated with anæsthesia, with rhythmical tremor of the right arm. The tremor was recent, having come on after injury, but the condition of the face dated back as far as seven years. The diagnosis of hysteria is made upon several grounds, the strongest of these being the fact that the tremors disappeared in a few days under suggestion, a sufficient proof apparently for French authorities that it was hysterical. But even if we grant that the tremor was a hysterical manifestation, it by no means follows that the facial paralysis is, and however difficult the explanation of the condition may be there seems to be little, if any, justification for the diagnosis of hysteria, a diagnosis as unsatisfactory as it is meaningless.

THE HOUSING OF THE SALFORD POOR.

AN inquiry has been held at Salford into the accuracy of the representations of Mr. Charles Edward Paget as to five unhealthy areas under the Housing of the Working Classes Act. These areas contain respectively 149, 84, 82, 42, and 21 houses, the populations being 615, 240, 110, 90, and 68 persons. The density of population in each respectively is 360, 377, 468, 233, and 319 persons per acre. The average general rates of mortality in the five areas during the five years 1884-88 ranged between 40·8 and 78·2, and during the same period the death-rates from the principal zymotic diseases, including diarrhœa, ranged between 5·8 and 14·5, and from pulmonary diseases, including phthisis, between 14·4 and 25·4. During the years 1889 and 1890 these high death-rates were maintained. Apart, therefore, from defective condition of houses in the areas, there was a strong case against them, but we gather from the report of the evidence given at the inquiry that the houses were of the back-to-back kind, and therefore nothing could be urged on their behalf. As a matter of fact, the schemes were not opposed, and we assume therefore that no obstacle will be put in the way of the Salford Corporation. The schemes proposed only to rehouse 370 of the 1123 persons who would be displaced, and Mr. Samuel Joseph Smith, the inspector of the Local Government Board, who held the inquiry, pointed out that there was no evidence as to how accommodation was to be provided for the remainder. Mr. Paget, however, showed that within a quarter of a mile of these areas there was already vacant accommodation for 625 persons. The inhabitants will therefore not be exposed to any serious inconvenience. Part II. of the Act gives special facilities to local autho-

rities on this point, and it may be hoped that eventually Part I. will be modified in the same direction. It is not unreasonable to require that the land cleared shall be devoted to houses for the working classes, but it is imprudent in the highest degree to require that an area which has been cleared at great expense shall be again overcrowded with buildings and population. We congratulate the Salford Corporation and their medical officer on the step which has been taken, and trust that nothing will lead them to hesitate to continue to apply the Act until all the unwholesome spots in their borough have been improved.

THE STRUGGLE FOR LIFE AT THE WRECK OF THE "UTOPIA."

IN *The Times* of March 25th there appears from an officer on board the *Anson* a most graphic account of the *Utopia* disaster, evidently written while the terrible scene was fresh in his memory and its horror still vivid before him. While the officers of H.M.S. *Anson* were dressing for dinner the "officers' call" sounded, and all were speedily at their posts. The *Utopia* was sinking fast, and the waves, washing over her, were sweeping away people by dozens into the sea around. Every wave that passed over the ship lessened the numbers struggling for life. There was one man hanging by one leg to some rope aloft quite dead and nearly naked, and around were others clinging and shrieking for help. Another man had lashed himself to the sails for security, and was drowned standing up, while some of those free, and apparently in greater danger, were saved. One poor fellow, when the *Utopia* first sank, got so excited that, crying out "Oh! I can't stand this," he jumped overboard. The cold water brought him to his senses, and he was picked up and saved, but he had no recollection of what he did. Here is an instance of the effect of shock on the senses suddenly depriving the individual of the power of using them even to save his own life. We are apt sometimes to underestimate the effect of shock in accidents less appalling, and it is only by such a circumstance as is here described that we can judge by comparison of those lesser instances of shock to the nervous system which we are so often called on to relieve or to estimate the bearing of with regard to the future life of an individual; especially is this so in railway accidents, in which shock to the nervous system often forms the most serious part of the injury.

ST. BOTOLPH'S CHURCH, ALDGATE.

IN THE LANCET of March 21st we pointed out that the excavations in progress at St. Botolph's Church, Aldgate, for the purpose of widening the public roadway at the junction of Houndsditch with Aldgate High-street, had disclosed a quantity of human remains. It appears that in the course of this work no less than 116 wooden cases, measuring inside 4 ft. by 1½ ft. by 1½ ft., each containing the osseous remains of twelve persons, in addition to forty coffins, each containing one body, or, approximately, in all, the remains of 1432 persons, had been exhumed on Friday, the 20th ult. It is likely that since then more of these boxes and coffins have been discovered. This enormous mass of human corruption, we were informed by a correspondent in last week's issue, has been "reverently and decently" disposed of by placing it in the vaults beneath the church itself, after being smeared with lime and covered an inch thick with vegetable charcoal. A fortnight ago we protested against this as "a retrograde movement not admitting of any arguments in its defence," and suggested the removal of such remains to some suburban cemetery. Dr. Sedgwick Saunders, medical officer of health for the City of London, also feels "that an earnest protest against such a course should be entered in the interest of public health." He writes: "The floor of these vaults consists of fine dry earth, intermixed with human bones in great quantities on and beneath the surface, besides which they contain sunken brick graves, in all probability containing human bodies in every stage of decay." He adds: "We know that no amount of brickwork and cementing can ensure perfect sealing of noxious emanations with any certainty." Further, the heating apparatus of the church will act as an air pump, by which the foul gases will be attracted and conducted into the interior of the church. In addition to this Inspector Hills reports, that "settlements have taken place in the brickwork, occasioning cracks in the arches themselves, which are liable to increase and add to the danger." Dr. Saunders recommends that a representation of these facts be made to the Home Secretary, with a view to amending the order of the Consistory Court, and directing as an alternative the removal of the whole of these human remains to the City of London Cemetery at Ilford, a course, as we pointed out previously, which should have been originally carried out. Dr. Saunders has communicated with the Home Office, and is authorised to state that Dr. Hoffmar, Medical Inspector, Burials Act Department, is in accord with these views. It is a question whether the interment of human remains within St. Botolph's Church is not in direct contravention of an order in Council granted in 1853, which prohibited any further burials either in the vaults or churchyard of St. Botolph's Church, Aldgate. But if the question of the legality of the proceeding is doubtful, it is more than fifty years since its impropriety and its unwisdom were settled. In these days of burial reform it is without defence.

DURHAM DEGREES IN HYGIENE.

A SCHEME whereby registered medical practitioners over twenty-two years of age can obtain the degree of Bachelor or Doctor of Hygiene in the University of Durham has been approved by the Senate of that University. The course includes attendance on lectures on public health, attendance on the clinical practice and lectures, instruction in the City Hospital for Infectious Diseases in Newcastle-on-Tyne, and instruction in sanitary medicine and practical hygiene. The examination will be conducted by written papers and practical and *viva-voce* questions, and will be commenced on Sept. 14th, 1891, and again in April, 1892. Particulars of the syllabus for this examination will be given in our Students' Number.

MORVAN'S DISEASE.

THIS condition, first described about eight years ago by the physician whose name it now bears, is one of those apparently spinal diseases associated with changes in sensibility and nutrition manifesting themselves especially in the hands. The three symptoms on which at first a diagnosis was made were pains in the limbs at the commencement of the illness, paresis and analgesia, especially of the hands, and the appearance in one finger after another of whitlows, painless but destructive. Several cases have been described, but the pathology of the disease is still uncertain, some physicians regarding it as merely a form of syringomyelia, while Morvan and his followers, relying upon the somewhat unsatisfactory examination of one specimen, regard it as due primarily to some change in the cord associated with thickened arteries, and secondary changes in the peripheral nerves. In the *Journal of the American Medical Association*, Dr. Church of Chicago gives a clinical account of a case which seems to answer to the description of this disease. The patient is a Swede, aged thirty-five, the commencement of whose symptoms date back to ten years ago, when he had a whitlow on the

right ring finger, which was painful, and has left the distal phalanx stunted, and nail much altered. About this time, also, his back was noticed to become bent, although previously it had been quite straight. A few years ago, after bathing in a cold lake and driving afterwards some distance, his left wrist, hand, and arm became swollen and painful. The swelling in the wrist has never quite subsided, and the carpus is now to all appearance disorganised but quite painless. Three years ago he had a painless whitlow on the right index finger, in which now the distal phalanx is completely wanting, as well as a part of the middle one. In the same year the middle finger of the right hand suffered a similar mutilation, also from a painless whitlow. He now has these deformities in the fingers and the left wrist, has retention of ordinary tactile sensibility everywhere, but with loss of the power of distinguishing tactile from painful impressions in the hands. Above the hands this disability gradually disappears. There is also present marked lateral curvature of the spine; his gait is shambling, but displays no distinctive peculiarity; his reflexes are normal, and his mind is unaffected. The case is a peculiarly interesting one, especially in reference to differential diagnosis from syringomyelia, but more will have to be known of both conditions before a certain diagnosis is possible.

CHYLURIA IN HUNGARY.

A CASE of chyluria, the first recorded in Hungary, was exhibited by Dr. Angyán before the Buda-Pesth Medical Society at its last sitting. The patient was a man of thirty-four, who had noticed his urine to be turbid for four or five months, this being especially marked in the latter part of the day, that passed in the morning being less affected, and sometimes even quite clear. Occasionally he suffered from pain in the region of the kidneys. The urine was found to pass turbid through a filter, but the addition of ether cleared it. With the microscope, molecular corpuscles were seen, and also red and white blood-cells. The specific gravity varied from 1025 to 1036.

DEATH UNDER CHLOROFORM.

A CASE of death under chloroform is reported by Surgeon-Major Gordon Price, civil surgeon at Burdwan, India, in the current issue of the *Indian Medical Gazette*. The fatality occurred at the Burdwan Dispensary, and the patient, aged thirty, was about to have a plastic operation performed upon her face for the restoration of her nose. Physical examination revealed no evidence of disease beyond a splenic enlargement; the heart and lungs were healthy. Surgeon-Major Price himself administered the chloroform, and used all precautions. Upon the patient becoming unconscious, he requested his assistant, Sargeon Babu Guru Nath Sen, to undertake further chloroformisation while he proceeded with the operation. Assistant Surgeon Sen exclaimed, "Wait, her pulse has stopped." "How can that be?" was the reply; "her respiration is all right," pointing to the patient's abdomen, which was rising and falling regularly. Upon feeling for the radial pulse the statement of the assistant surgeon proved to be correct. "A few seconds afterwards her breathing, which had been perfectly normal, almost ceased." Artificial respiration was sedulously but vainly tried for an hour, and all efforts to stimulate the heart and respiration failed. Surgeon-Major Price concludes: "There was not at any time during the administration of the chloroform the slightest tendency to stertorous breathing, and the woman's chest and abdomen could be seen regularly rising and falling, as in normal respiration, until some seconds after the exclamation of the assistant surgeon. The amount of chloroform used was not measured, but was not excessive. I have always believed, even before the time of the Hyderabad Commission, that in death from chloroform the breathing was primarily affected, and have, in administering the drug, paid continual attention to the patient's respiration, and have impressed this at all times upon my assistants. In the present case there cannot be any doubt that the heart was primarily affected."

FRIEDLÄNDER'S PNEUMOCOCCUS AS A FERMENT.

IT has been known for some time that Friedländer's pneumococcus is capable of inducing fermentative changes in suitable solutions of glycose and cane sugar, this having been first discovered by Brieger. His observations have quite recently been confirmed by Dr. Percy Frankland, Mr. Arthur Stanley, and Mr. William Frew, who have just communicated a paper on the subject to the Chemical Society of London. They further found that the organism ferments maltose, milk sugar, raffinose, dextrin, and mannitol, but that, like the bacillus ethaceticus, it does not attack dulcitol. They made a special study of the fermentations of glucose and mannitol, determining quantitatively the proportions in which the several products are formed. These products are in each case ethyl, alcohol, acetic acid—generally accompanied by a little formic acid and a trace of succinic acid—carbon dioxide, and hydrogen. Both the glucose and mannitol were in all cases only partially fermented, and the decomposition of the glucose was especially incomplete, glucose being apparently less readily attacked by the organism than mannitol and cane sugar. The fermentation was not rendered more complete by furnishing the organism with a more abundant supply of nitrogenous food. The products of the mannitol fermentations were not only qualitatively similar to those obtained in the fermentation of the same substance by the bacillus ethaceticus, but the relative proportions in which they were formed were almost identical, the ratio corresponding closely to the molecular proportions $2\,C_2H_5.OH : CH_3.COOH$.

THE INFLUENZA IN AMERICA.

AN epidemic of this disease is said to be raging with more than ordinary virulence in Pittsburgh and in Alleghany. At Chicago the death-rate has increased to 150 daily. Hospitals which were intended for the reception of accident cases or paying patients only have been thrown open to the sufferers from influenza, and are crowded beyond their resources. From Cleveland, Ohio, 2000 cases are reported, and in New York 160 policemen are on the sick list.

THE SECOND CONGRESS OF AMERICAN PHYSICIANS AND SURGEONS.

THIS Triennial Congress is to meet at Washington, D.C., in September, from Tuesday, Sept. 22nd, to Friday, Sept. 25th, inclusive. Dr. S. Weir Mitchell will preside. Dr. John S. Billings is treasurer, Dr. William Pepper is chairman of the executive committee, and Dr. W. H. Carmalt, Newhaven, Conn., is the secretary. The Congress is a meeting of certain national medical societies, so arranged that, while each society meets separately, there are stated occasions in which the members of all meet and constitute the Congress. According to the preliminary programme the chief subjects of discussion will be: On the Tuesday, Conditions underlying the Infection of Wounds, including a discussion on Disinfection; of the Relation of Bacteria to Suppuration; of the Resistance of Tissues to the Multiplication of Bacteria; and of the Effects of Antiseptic Agents on Wounds, by Dr. Welch of Baltimore, Professor of Pathology in Johns Hopkins University, and Dr. Roswell, Professor of Surgery in the Buffalo Medical College. On the Wednesday: The Late Manifestation of Syphilis, by

Dr. Phineas S. Conner of Cincinnati, Professor of Surgery in the Medical College, Ohio, and Dr. Abner Post of Boston, Instructor in Venereal Disease and Syphilis in Harvard University. On the Thursday: Fibroid Processes (Chronic Interstitial Inflammation, Scleroses), their Pathology and Etiology, with special reference to the Influence of Diathesis and Heredity, by Dr. Alfred L. Loomis of New York City, Professor of Pathology and Practice of Physic in the University of the City of New York, and Dr. William Osler of Baltimore, Professor of Medicine in Johns Hopkins University. The programme is well conceived. The constitution of the Congress warrants that the subjects will be viewed from many different points, and the executive is a guarantee of the representation of all that is best in American medicine and surgery.

"ASTASIA-ABASIA"

DR. GRAEME M. HAMMOND of New York reports a case of this disorder. The patient was a young woman in whom the symptoms came on after overwork. She had no neurotic history, she had previously shown no sign of hysteria, and she was active and energetic naturally. But at the commencement of her illness she had suffered from aphonia. The condition described as "astasia-abasia" is one of inability to stand or walk, but without paralysis—that is to say, that the patient is able to carry out all movements of the limbs as she lies in bed, but is unable to walk. This patient in attempting to walk advanced the left foot, and then slowly brought the right one up to it, alleging that if she tried to rest her weight on the right leg she would fall. An attempt to do so resulted in her turning round to the right and falling, and the same tendency to turn to the right was evident to anyone supporting her. There was no anæsthesia, colour-blindness, or contraction of the visual fields. The knee-jerks were active, and there was no ankle-clonus. There appeared to be, however, slight loss of muscular sense in the right leg. The previously described cases of this disorder have been similar to Dr. Hammond's, although in many there have been various disturbances of sensibility, consisting in some of anæsthesia, in others of hyperæsthesia. There seems to be little, if anything, to distinguish the case from one of so-called functional paraplegia—a by no means uncommon condition,—and Dr. Hammond himself is of opinion that the condition is a hysterical one.

THE ACTION OF THE VAPOUR OF ETHEREAL OILS ON BACTERIA.

NOTWITHSTANDING the researches of Schultz, Koch, Schill, Fischer, Riedlin, Chamberland, and Braddon, the action of ethereal oils in a state of vapour upon bacteria is by no means well known. As this is a subject which bids fair to have practical interest for the physician as well as for the bacteriologist, a somewhat elaborate research by Dr. Omelchenko, which is published in the *Vrach*, is a welcome addition to our information. Its details must have been very carefully planned and carried out, for it gained the Pirogoff gold medal of the University of Kieff. The observations were made upon cultures of the bacilli of typhoid fever, phthisis, and the Siberian sore (anthrax) by passing over them with the help of an aspirator a slow but continuous stream of air saturated with the vapour of certain ethereal oils, and noting the time which each different vapour required to destroy the bacilli; the quantity of each oil used and the volume of air passed over each tube, as well as the amount of each vapour which the air was capable of holding, were also noted. It was found that if the air was not quite saturated, the effect was very markedly diminished. The bactericidal properties of the different oils were found to be greatest in oil of cinnamon, after which the others may be arranged with reference to their bactericidal power in the following descending order:—Oleum fœniculi, oleum lavendulæ, oleum caryophyllorum, oleum thymi, oleum menthæ piperitæ, oleum anisi, oleum menthæ crispæ, oleum eucalypti globuli, oleum camphoræ japonicæ, oleum valerianæ, eucalyptol, French oil of turpentine. The oils of lemons and of roses had an exceedingly slight action. Bacteria in a dry state were much less easy to destroy than those which were in their natural state; a fresh condition of the sporules of the Siberian sore, however, weakened the destructive effect of the vapour. It was found that the protoplasm of the various bacilli was affected in its chemical constitution in a constant manner for each kind of bacterium, losing its power of taking the stain. This change seemed to affect all parts of the organism equally. The death of the bacteria was shown both by this loss of capacity for taking the stain, and also by the tendency to assume a granular condition. Tables are given of the experiments, from which we see that oleum cinnamomi and oleum valerianæ took the same time to destroy the bacilli of typhoid fever—viz., forty-five hours; but, inasmuch as each litre of air took up only 0·0005 grm. of the former, as against 0·0082 of the latter, the total quantity of cinnamon oil used being 0·0646 grm., while 1·0429 grm. of the oil of valerian was required, it is evident that the former deserves the higher place in the scale of bactericidal substances. Experiments by previous writers made with emulsions of ethereal oils placed in contact with bacterial cultures have not generally shown that these possessed a high bactericidal capacity, and Dr. Omelchenko found that when he passed the air through emulsions instead of through the oils themselves the amount taken up was materially less than in the latter case, and so it would appear that the bactericidal capacity of any one of these substances depends largely upon its volatility.

THE PUBLICITY OF NOTIFICATION RETURNS.

THE London School Board have applied to the Metropolitan Asylums Board to be furnished with information respecting the occurrence of cases of infectious diseases in the metropolis, as shown by the notification returns, and in making this demand they are supported by what passed at a conference of metropolitan medical officers of health in December last. We can quite understand the demand of the London School Board. Nothing is more evident than that diseases such as diphtheria, measles, and scarlet fever owe their spread largely to the aggregation that takes place in elementary schools, and if any information is available, enabling this spread to be prevented or diminished, it seems absurd to withhold it. But it can apparently only be properly utilised if the schoolmasters and schoolmistresses are, in turn, supplied weekly with the notification lists which apply to the localities from which the children attending their schools are derived. And this means an abandonment of that avoidance of publicity which is believed to have governed the drafting of the Infectious Disease (Notification) Act, 1889, and especially of its third section, by which it was enacted that the returns, instead of being sent to the sanitary authority, were to be transmitted to the medical officer of health, who could be trusted to understand the desirability of maintaining, so far as it was possible having regard to the interests of the public, an attitude of professional secrecy.

OCULAR TROUBLES IN TABES DORSALIS.

DR BERGER, in the *Revue de Médecine*, has drawn attention to this subject. He has observed 109 cases of the disease, and from the results of those observations he draws certain conclusions. He finds that, in cases in which the condition has manifested itself in youth or in old age, serious ocular

troubles are not met with, and that it is when symptoms of the disease appear between the ages of twenty-five and forty that those complications for the most part occur. In half the cases observed the Argyll-Robertson phenomenon was present. In eleven cases it was accompanied by mydriasis, in fifteen cases the pupils were of the usual size, and in two there was contraction of one with dilatation of the other pupil. He also found in a certain number of cases some irregularity in the shape of the pupil, and he remarks that when myosis is present with the Argyll-Robertson phenomenon the instillation of atropine causes a dilatation of the pupil, which may persist for four or five weeks. Atrophy of the optic nerve was found to be present in 33 per cent. of the cases, and it did not occur simultaneously in the two nerves. The interval between the commencement of atrophy and the establishment of complete blindness was found by this author to vary from two months to seventeen years, and he states that it usually begins in the pre-ataxic stage, and that, this stage once passed, the danger of atrophy setting in is considerably diminished. Paralysis of the external muscles of the eye was observed in 38 per cent. of the cases. It was found to occur usually in the pre-ataxic stage, to be as a rule transitory, and to be more frequent and more lasting in patients with a clearly specific history. In conclusion, the author formulates a theory of the pathology of tabes. In his opinion it originates in some change in a centre in the medulla regulating the vaso-motor condition of the optic nerve and of the spinal cord.

WORKING WOMEN AND FACTORY LEGISLATION.

THE Women's Trade Union League recently held several special meetings to discuss the Factory Bills now before Parliament. The League, from its long and practical experience of the difficulties under which women labour who seek to earn their living, was in a good position to judge the merits of the proposed legislation. This legislation, in the opinion of the League, is evidently incomplete. The discussions are summed up by a series of resolutions which, we are pleased to note, agree with many of the suggestions we made during the course of our inquiries on the sweating system. For instance, the first resolution insists that in factories and workshops each sex should be provided with separate sanitary accommodation. Then the League is so impressed with the necessity of a great increase in the number of factory inspectors that it proposes the creation of sub-inspectorships. These sub-inspectors would, we presume, stand in somewhat similar relationship to the inspectors as sanitary inspectors do to the medical officers of health. With respect more particularly to the sweating system, the League agrees with us that "the worst economic and sanitary evils arise from the impossibility of supervising and controlling home workers"; it therefore urges that "home work should be discouraged by every means available, and that all such places, including even bedrooms, where goods are made up which the public will be invited to purchase should be put under the control of the public, and consequently subjected to the visits of factory and sanitary inspectors." This thoroughly coincides with the principle we have always proclaimed—namely, that the public has the right to protect itself against the danger of infection by controlling the manufacture of the articles it purchases. But in all this there are two difficulties to be overcome—the supineness of local authorities and the resistance of the working classes themselves. The local authorities are, too often, slow to take action. The League therefore urges that some central authority should have the power to stimulate and, if necessary, to force the hand of the local authority. This, we take it, is what is implied by the first clauses of Mr. Matthews' Bill. There will still remain, however, the resistance of the working classes themselves, who dread such sanitary inspection as may lead to interference with their work and consequently reduce their too slender earnings. The Women's Trade Union League, to obviate this obstacle, recommends that power should be given by law to local authorities to make grants from the rates in compensation for loss of work occasioned by the closing of workshops or factories ordered by such local authorities on sanitary grounds. This is an important suggestion. We have often urged that workers, especially home workers, like tailors, laundresses, &c, who usually earn barely enough for subsistence, should, when their work is stopped for sanitary purposes, such as disinfection, be compensated by the authorities. Otherwise the laws of self-preservation and the fear of hunger will tempt workers in this precarious position to conceal the outbreak of any infectious disease. They must be made to feel that it is a public duty to give immediate notice of the presence of infection in their homes or their workshops, and that the neglect of this obvious duty will entail severe punishment, but that its due observance will result in no loss, for due compensation will be forthcoming. Altogether it will be seen that the Women's Trades Union League has, in its study of the necessary remedies to mitigate the evils of the sweating system, come to about the same conclusions as those we were led to adopt after the disclosures made by the special commissioners of THE LANCET, who visited the principal sweating dens of East London and the leading provincial towns.

LARYNGEAL COMPLICATIONS IN TYPHOID FEVER.

IN severe cases of enteric fever various throat complications have been described, but their connexion with the original disease has not been satisfactorily established. In *L'Union Médicale* of March 10th, 1891, Professor Peter describes a case of a man who died of typhoid fever, and in whom the throat complications were well marked. In commenting on the case he remarks that hyperæmia of the larynx is a common symptom of typhoid fever, being most marked on the aryteno-epiglottidean folds. Ulceration following this condition was first noticed by Louis in 1828, who stated that if at a necropsy extensive ulceration of the larynx was found, and if tuberculosis could be excluded, typhoid fever lesions should be sought for. Occasionally, when the laryngitis is intense, Eberth's bacilli are found in the glands around the larynx. An œdematous swelling often appears, and the inflammation may lead to suppuration, extensive ulceration, and even destruction of the cartilages. Laryngitis in connexion with enteric fever assumes two chief forms: the acute and the chronic. The first-mentioned develops from the fifteenth to the twentieth day, at the time when the disease ought to be subsiding. Its onset is marked by local pain, difficulty in swallowing, and dyspnœa chiefly affecting inspiration, expiration being perfectly easy. The difficulty of breathing gradually increases, generally requiring tracheotomy to be performed in order to prevent death by suffocation. Post mortem there is found sero-fibrinous or purulent infiltration with commencing destruction of the epiglottis and the arytenoid and cricoid cartilages. The more chronic form does not commence until convalescence has been well established, at least two months after the termination of the attack, and when the patient is apparently cured. The voice becomes hoarse, there is evident difficulty in speaking, and finally symptoms of œdema of the glottis appear. The prognosis is then very grave; according to Sextier of ten cases which required tracheotomy all proved fatal. Some German statistics show that of nineteen cases which required

operation seven only recovered. Even if a cure is effected the condition is a very unsatisfactory one, as the cannula has to remain in position for an indefinite period, and the cicatrices which form in the larnyx often producing such constriction as to cause almost total obstruction. In short, in all the parts affected by enteric fever there is a tendency to ulceration, and this is particularly liable to occur in the larynx, and if such happens the submucous tissue becomes infiltrated, and perichondritis follows in its turn. Finally, there is erosion of the cartilage; and, if the patient survives, there are premature ossification of the cartilages and necrosis of the epiglottis and of the arytenoid and cricoid cartilages. Sometimes a small portion of cartilage may be detached—a very dangerous occurrence, as it is very apt to fall into the trachea and cause alarming symptoms, and even death from suffocation. At other times the whole cricoid cartilage may become detached, and be ejected in the form of a sequestrum. The only treatment likely to be effectual is to apply counter-irritants, such as blisters, to the front of the neck.

REGULATION OF STREET MUSIC.

THE nuisance caused by street "musicians" is a very ancient grievance, and it is greatly to be hoped that Mr. Jacoby will be more successful in his proposed measure for its removal than others have been before him. His proposal is that every street "musician" shall, when requested by any householder to cease playing his "instrument," do so, and remove to a distance of not less than a quarter of a mile. There are, we believe, other provisions, but this is the one in which, as caring for the public health and the comfort of members of our profession, we are most interested. A large proportion of the inhabitants of these kingdoms must dwell in large towns or cities, and to all those who do not possess the power of abstraction, the wear and tear of nerves, the worry and trial of temper caused by noises, tell very seriously on the health, and, it may be added, even on the duration of life. Street noises may be divided into those which are inevitable and those which can be prevented. To the former belong those caused by street traffic, to which people get so used that the quiet of the country is often irksome; while modern forms of pavements have in recent years done something to diminish them. The principal noises which can and ought to be prevented are those caused by street cries and street "music." Church bells, too, especially when tolled in the monotonous manner so familiar to all Londoners, cause a noise which is very distressing to many invalids as well as to healthy but nervous people, and which is wholly unnecessary. Whether it would be possible to silence the bells of the established churches by episcopal authority is an open question; but it may be observed that in churches and chapels belonging to other denominations and in the Episcopal churches of Scotland large congregations assemble for worship without any bell summons; and if the bells in all the London churches were silent save at the hours, half hours, and quarters, the congregations would probably be as large, though there might at first be some late arrivals. We have frequently pointed out that the tolling of bells previously to any other service than morning and evening prayers and funerals is not legal, and is certainly without any use. It is unfortunate that the subject of street "music" has never been treated either in or out of the House of Commons with the seriousness which it merits. Those who complain of it are ridiculed, or a plea is urged on behalf of the poor who but for these itinerant "musicians" would never hear that "music" which "hath charms to soothe the savage breast." It may be very safely asserted that the music alluded to by the poet was very different from the discordant sounds which issue from German bands and Italian barrel organs. Moreover, Londoners have this so-called street music inflicted upon them at any hour of the day, however unseasonable, from early morn to dewy eve, and even up to nearly midnight. The late Mr. Babbage, the late John Leech, and others, who have earned fame in literature, had their lives harried, if not shortened, by this pest, and the marvel is that it has been tolerated so long. The Bill proposed by Mr. Jacoby is, as regards this its most important clause, similar to a local Act in force in Liverpool and elsewhere. The streets do not belong to any individual or class, but to all, and nothing can be more reasonable or moderate than that any householder should have power to prevent any street "musician" from playing to his annoyance. Care must be taken to draft the clauses so that there shall be no loopholes left for evasion, and it would be well to have copies of the Act (if passed) translated into German, Italian, and such other languages as may include the nationalities of all street "musicians." In conclusion, it may be observed that street bands and organs have been the cause of many fatal street accidents. For all which reasons we trust that Mr. Jacoby's Bill will pass.

A REMEDY FOR ANTHRAX.

MR. E. H. HANKIN (*Centralbl. f. Bakter.*, vol. ix., Nos. 10, 11) of Cambridge University has succeeded in isolating from the spleen and blood-serum of the rat an albuminoid substance which destroys bacterial life. It is a basic body, differing from any bases hitherto known in being insoluble in alcohol and in water, and in not dialysing. It is a globulin; and to its presence is ascribed the power possessed by the blood serum of the rat of killing anthrax bacilli. Mr. Hankin thinks it probable that the immunity which the rat enjoys to anthrax and diphtheria is, in part at least, to be ascribed to the capability of the rat organism of producing this material. Still further importance is to be assigned to this research from the conclusion that the bactericidal property of this substance can be exerted not only outside, but also within the body of animals susceptible to anthrax. Hence it is possible, he thinks, for the "protective albuminoid body of rats" to be utilised as a remedy for anthrax.

JUVENILE SMOKING.

EXCELLENT common sense on the whole directed the proceedings at a conference recently held in the Town Hall, Manchester, to consider the expediency of arresting the prevalence of juvenile smoking. According to the medical officer of health for the city this habit is practised by 80 per cent. of the Lancashire boys, and his rough calculation may not be very far from an accurate statement of facts. Anyone, or rather everyone, who daily meets with that presumptuous atom of manhood, the boy cigarette-smoker, must have been astonished at the general distribution of the prodigy. Equal, if not greater, is the surprise excited by his diminutive size and exceedingly tender age. Some years ago it was the boy of twelve, fourteen, or sixteen that opened our eyes. Now it is the six or eight years old, the literal infant who prolongs his still recent privilege of suction in a fashion undoubtedly hurtful by perverting at a critical period the sensitive processes of nervous action and nutritive change. The Manchester conference discussed various possible correctives of this mischievous practice. Among these we may mention education of a homilectic character, to be carried out in Board schools. Another and more practical suggestion advised ministers and teachers to set the example of abstinence in their own persons. As a last resource, it was proposed that the aid of the law—restricting, as in Germany, the right to use tobacco to persons over sixteen years of age—should be called in to strengthen

the gentler measures already referred to. As regards the wisdom of this latter step there would seem to be some question. We are not of those who favour the unnecessary multiplication of petty laws. There is, in cases of the kind in question, no power which in our opinion is either so natural, so safe, or so effectual as that of judicious home training, and we are not hopeless of yet seeing its influence applied far more widely than at present.

THE DEATH OF EARL GRANVILLE.

WE record most regretfully the close of the earthly career of the eminent statesman and politician Lord Granville, at the age of seventy-six years. In his last illness he was attended by Sir Andrew Clark, Sir James Paget, and Mr. Reginald Harrison. Some six weeks ago he caught a chill, from which he never completely rallied. Being of an extremely gouty disposition, his previous attacks of that disease had very much enfeebled his recuperative powers. From time to time he seemed to rally and regain strength; and during the illness he had an attack of parotitis, which resulted in suppuration of the parotid gland and necessitated its being opened. This was the only operation to which he was submitted, and it did not seem to have very much to do with the fatal issue. During the last week of his illness he manifested a great distaste for food, and although all kinds of endeavours were made to administer nourishment they were unsuccessful. He gradually grew weaker, and finally succumbed on the evening of Tuesday, March 30th. While all men owe gratitude to him for the deep interest he took in educational matters, medical men owe more from the peculiar interest he took in that profession. Universities and colleges, hospitals and medical schools, have alike derived inestimable assistance from the deceased nobleman. He occupied the position for the last thirty-five years of Chancellor of the University of London, and was president of the Royal Medical Benevolent College at the time of his death. A late president of the College of Surgeons has spoken of him as "an illustrious statesman, who, as Chancellor of the London University, is foremost in the promotion of general education, and President of the Medical Benevolent College, a president who has taken a very active part in its welfare." But in days long since gone by, between 1837 and 1846, the period *par excellence* of medical reform, when he was a member of the House of Commons, he invariably lent his assistance to the promotion of those reforms, and has frequently expressed his admiration of the founder of THE LANCET, and of the efforts made by the late Mr. Wakley to effect legislation on behalf of the medical profession. Those were the days of the Coroners Bill, the Medical Witnesses Bill, the Factory Bill, the Vaccination Bill, and the Medical Reform Bill. In all these legislative measures, and in many others, the late Earl took an active part, and accorded his influential support to every measure of reform which was to benefit the medical profession generally. And since that period, during the forty years in which he had occupied a seat in the House of Lords, he continued to be an earnest friend and benefactor to our profession.

THE RESPONSIBILITY FOR INFECTION.

IT is nothing new to learn that infection may be transmitted by post, yet we cannot doubt that this fact is often overlooked and sometimes, as in an instance lately reported, by persons whose knowledge of the probable consequences ought to make them more careful. In the case referred to a hospital matron was censured and fined in costs for sending to the neighbouring isolation hospital by parcel post, and without using the needful sanitary precautions, a package of clothes which had been forwarded to her by a nurse for disinfection. One can easily understand the natural dread which prompted this action as the readiest means of removing from the hospital premises material so dangerous to the health of its inmates. The primary fault it must be allowed was not on the side of the matron. The sender of the clothes and the occupants of the house whence they were sent were the original culprits, for, by the terms of the Infectious Diseases Act, disinfection, where not undertaken by the local authorities, must be carried out by the owner or occupier of the infected dwelling. Possibly the clothes in this case were the nurse's own, but if so this makes no real difference. They were for the time being within the infected house, and their purification should have been there provided for. This circumstance does not, of course, excuse the matron, who, having received the parcel, was responsible for its disinfection; but it should serve, as it well may, to render any in her position severely careful that the duties imposed by law in such matters shall be discharged by those who are in the first place accountable for their performance.

THE PIGMENT OF MELANOSIS.

DR. FELIX LAGRANGE, in a paper read before the Société d'Anatomie et de Physiologie de Bordeaux on Dec. 8th of last year, described some investigations he had made as regards the distribution of the pigment in two melanotic tumours. One case was that of a melanotic sarcoma which had been removed from the orbit, and the other was a tumour of the eyelid. Microscopic examination showed the same structure in both cases, but the tumour which had developed in the orbit was more deeply pigmented than the other, though the distribution of the pigment was morphologically the same in each case. Sections of both tumours exhibited fusiform cells and many embryonic elements. A few vessels were seen, but there were no hæmorrhagic foci. The pigment was intra-cellular. In some cells it was completely absent, whilst others were so full as to lose their characteristics, and to appear as black round masses; other cells, again, contained in their protoplasm fine black granules. In order to study the nature of this pigment it was necessary to isolate it from the cellular elements. By treating a section with sulphuric acid, the cellular elements were partially destroyed. Under the influence of this reagent the sarcomatous tissue became shrivelled, remaining as a translucent structureless mass, in the centre of which was the pigment. Nitric acid was next tried; but, although the structure of the tumour was completely destroyed, there still remained a whitish residue in which the pigment remained entangled. In order to obtain a pure preparation of melanine the following process was adopted with success. Having treated a portion of the tumour in which the pigment was abundant with pure sulphuric acid, it was placed, still saturated with the reagent, for twenty-four hours in a moist chamber. In this way the now plastic tissue was partially liquefied, some glycerine was then added, and the containing vessel closed for forty-eight hours. At the end of that period there remained nothing but the pure pigment. It presented three principal forms. 1. Some black masses, evidently formed by the union of a series of granules, separated by unequal intervals, the spaces being filled by a transparent cement which had been unaffected by the acid. These masses were the remains of those cells which had appeared to be entirely filled with the pigment. 2. Fine disseminated granules, which were rounded and very numerous. 3. Small irregularly shaped particles, for the most part angular, but presenting considerable variations in their form and size.

FOREIGN UNIVERSITY INTELLIGENCE.

Buda Pesth.—The medical faculty have drawn up a plan for altering the medical examinations for the degree of M.D. According to the new scheme, which has yet to receive the sanction of the Minister of Education, the present three great *Rigorosen*, or "severe examinations," will be replaced by five, as follows:—1. Physics and Chemistry. 2. Anatomy and Physiology. 3. General Pathology, Pathological Anatomy, and Pharmacology. 4. Clinical Medicine, Surgery, Midwifery, and Ophthalmology, also Operations. 5. Systematic Medicine and Surgery, Medical Jurisprudence, Hygiene, and *vivâ-voce* examination in some special department of Practical Medicine.

Kiel.—Dr. F. Graf von Spee has been promoted to the rank of Extraordinary Professor.

Rostock.—Dr. F. Blochmann of Heidelberg has been appointed to the chair of Zoology, in succession to Professor Braun, who has accepted an invitation to Königsberg.

Toulouse.—This school of medicine has been suppressed by decree, and replaced by a "faculty." The following appointments have been made to professorships:—Anatomy, M. Charpy; Histology, M. Tourneux of Lille; Pathological Anatomy, M. Tapie; Operations, M. Labéda; Forensic Medicine, M. Duponchel; Clinical Medicine, M. Caubet and M. Mossé of Montpelier; Clinical Surgery, M. Chalot of Montpelier and M. Jeannel; Clinical Midwifery, M. Crouzat of Paris; Chemistry and Toxicology, M. Frébault; Pharmacy, M. Dupuy.

Vienna.—Dr. M. Kassowitz has been promoted to be Extraordinary Professor of Children's Diseases.

DEATHS OF EMINENT FOREIGN MEDICAL MEN.

THE deaths of the following distinguished members of the medical profession abroad have been announced:—Dr. Maly, Professor of Chemistry in the University of Prague, at the age of fifty-nine.—Dr. Wilhelm Schlesinger, a well-known Vienna medical author, at the age of seventy-nine.—Dr. Karl Beyerlein, one of the most eminent of the Kissingen physicians.—Prof. Karl Braun von Fernwald of Vienna, at the age of sixty-nine.—Dr. N. P. Vasilieff, *privat docent* in the St. Petersburg Medical Academy, and editor of Botkin's *Bolnichnaya Gazeta*, of cardiac disease, at the age of thirty-seven.

THE Council of King's College last week elected Dr. Joseph Priestley, B.A., M.D., D.P.H., as Demonstrator in State Medicine and Public Health at their new laboratories.

WE regret to announce the death, at the age of seventy-nine, on the 28th ult., of Deputy-Inspector-General of Hospitals James Sanderson, F.R.S.Edin., of the Madras Army (retired).

SECONDARY SEXUAL CHARACTERS.

THE study of biology is perhaps one of the most instructive and humanising pursuits in the domain of science, and scientific medical men have by no means had the smallest share in the development both of its botanical and zoological departments. Lectures on the subject are rarely characterised by the two qualities of impressive delivery and artistic illustration. We have listened frequently to lectures on this subject, and in many cases have been fain to admit that, although they were "well drawn," the amount of real instruction which has been received and retained must have been to a large extent the result of the inherent intelligence of the audience. On the other hand, flights of oratory dealing with portions of subjects in the shape of popular lectures have proved through the scantiness of illustration but very insubstantial mental pabulum. The best lectures are those which, like the "object lesson," combine the qualities of aptness and facility of illustration with interesting and impressive statement. A series of six lectures of this kind has just been delivered in the Royal College of Surgeons by Professor Charles Stewart, whose artistic skill and clearness of exposition made the course a most instructive and enjoyable one. He chose for his subject "Secondary Sexual Characters," a term which he defined as comprising those features by which we are enabled to distinguish the male from the female quite irrespective of the essential organs of reproduction, and which are not concerned either in the nourishment or in the protection of the young. He brought together and exhibited a number of preparations illustrating this subject and forming a series of types taken from the vegetable and animal world. Illustrations were chosen from the algæ and mosses, the liverworts, and the common equisetum. Further illustrations of secondary sexual characters in plants were obtained from the catesetum, the valisneria spiralis, the fig plant, butcher's broom, asparagus, many of the grasses, cannabis indica, and the common hop. In like manner types were chosen from the nematodes, rotiferæ, crustacea, arachnida, insecta, fish, amphibia, reptiles, birds, and mammals, from all of which the lecturer demonstrated that where a difference of size was found to exist between the male and the female it was noticed in all plants, in which there were secondary sexual characters, that the female was the larger of the two. The same difference was found in the nematodes, in the rotifers, and, with few exceptions, in the crustaceans. Among the insecta very much the same thing existed. In the mammals it was found that, without any exception, where a difference exists, the male is the larger. In the reptiles also the male is the larger. In the amphibia, and nearly all fishes, the female is the larger. Where there is a difference of colour, the lecturer showed that in almost every instance, both in plants and animals, the more conspicuous and brilliant colour is presented in the males. In plants the brilliant colours attract the insects, which aid in their fertilisation. Thus, in the case of plants, by attracting the insect which is necessary to convey the pollen to the female, colour operates to some extent in bringing about that which is effected in animals by sexual selection; and it is a fact that in both plants and animals it is the male as a rule which is found to be most conspicuous in colour. As regards the sense organs, it is the male in almost every case that shows excessive development of these. The antennæ of insects, the eyes, the hairs, are almost invariably more developed in the male. As regards glands which give off special odours (as in the case of bats &c.), it is found in almost every instance they are possessed in the fullest extent in the male. This secretion acts very probably as a sexual excitant. It may act like a drug, or it may act, conceivably, by mere association of ideas. In certain fish, and many other vertebrates, a marked difference in size characterises the sexes. The more pronounced and outstanding characters are commonly found to be possessed by the male, so that he is able to defend the female and the young, or to fight with his rivals for her favours. The lecturer then considered the question whether the possession of a certain structure by the male is to be looked upon as having been acquired by him or lost by the female. It has been shown by Poulton that in the case of the antennæ of insects there was evidence that in many instances the female had lost the large size and complex form of that sense organ by a process of degradation, and from having altogether different habits of life from the male. In the case of horns, Austin and others hold that originally both male and female possessed the organs, and that the females have lost them. In the case of the reindeer both sexes have them. For reasons such as this it is held that the female has lost the organs, from trusting to the protection of the male, in whom the horns are more developed. In antelopes the horns of the male are longer, stronger, more ringed, and more ornamental than those of the female, showing a tendency to loss and diminution on her part. As regards the origin of sex, the illustrations went to prove that so far as our observation at the present time goes, most forms in their primitive state were hermaphrodite to start with. A large number of forms can be shown to be so, and all distinguishing characteristics of the two sexes

are probably the result of the advantage accruing from the "division of labour," the female being modified to bear the bulky ova and the male the less bulky, but equally important, fertilising element. So that there seems to be an advantage in the "division of labour" as regards sex. What, he asked, had brought about and started the division of sex? The lecturer showed that in plants such as the hop, cannabis indica, and sundry other instances, an imperfect nutrition of the plant resulted in the formation of a male plant, whereas a fuller nutrition produced the more luxuriant female. In crustaceans, rotifers, &c., the male is very small and does not live long, whereas the female is larger, more long-lived, and has to carry the eggs for a long time. In cases high up in the mammalia, it has been shown by statistics that when a race or a nation has been in any way depressed below the normal level, by war or by famine, a rise in the percentage of male births at once occurs. That looks as if there were some direct influence upon the individuals determining the sex of their offspring; and there are cases in which the male functions appear when there is less nutritive vigour, and the female when this vigour has attained its maximum in the same animal. The lecturer, in concluding, said that he had thought it well to bring some of these questions under the notice of the Fellows and Members of the College, more especially as it enabled him to bring together certain illustrations of a biological group which he was anxious to see illustrated in the College museum, and that he would be exceedingly indebted to any of the Fellows or Members for any help he might obtain from them, in further illustrating this section of biology.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

Barnstaple Rural District.—The death-rate for 1890 was, according to Mr. Joseph Harper, an exceptionally high one, reaching 18·5 per 1000, this result being largely due to fatality from whooping-cough. Great care seems to be exercised in investigating the causes of such diseases as enteric fever, and in amending the conditions with which they are found associated. Much the same applies to the action taken in cases of diphtheria. The adoption of the Notification Act is said to have worked considerable good, but the medical officer of health naturally urges his authority to make that department of their work complete by the provision of a hospital for infectious diseases. However small the provision made at first, it will be found a boon; and if the urban district could be induced to join with the rural area in the matter, not only would the original cost, but the cost of maintenance also, be considerably reduced. If an adequate site be chosen, the question of extending the number of beds could easily be allowed to stand over for a while.

King's Norton Rural District.—This district, with a population of over 28,000, has for some years past had a creditably small death-rate, and Mr. Francis Hollinshead calculates it at 12 per 1000 for 1890, the zymotic rate being also low—namely, 0·7 per 1000. The system of notification revealed 239 cases of scarlet fever, and of these 14 died. The isolation hospital records afford a typical story of the uses to which such a building, which is properly constructed and administered, may be put. Thus no less than 371 cases of scarlet fever were isolated in it last year, 170 of this number coming from the sanitary district itself, and the remainder from two neighbouring urban districts. Indeed, the public demand for efficient means of isolation has rendered necessary the provision of a third ward pavilion. Mr. Hollinshead gives a record of the general sanitary work, from which we gather that his district is, in fact, still troubled with water-supplies which are liable to pollution. They are, however, done away with as soon as they are detected.

Aston Manor Urban District.—Mr. Henry May's annual report deals somewhat exhaustively with the sanitary condition of his district, and, perhaps, more than usually so in order to afford to the County Council of Warwick the information which they may need for their purposes when a summary of the local health reports comes to be compiled. The general death-rate for the year was 17 per 1000. Under the Notification Act of 1889, adopted in July, the number of cases of infectious diseases heard of was 922; no less than 478 of these being cases of scarlet fever. The number of scarlet fever cases removed to hospital was 160, but a payment for admission and other causes seem to hinder this class of work. Measles was also very prevalent, and it led to some discussion as to the utility of school closure under such circumstances, Mr. May holding the opinion that school restrictions were valuable as a means of prevention. A good deal of information is given in the report as to the sanitary circumstances of the district, and amongst other matters it is stated that a destructor has been provided for dealing with the refuse. The population of Aston Manor is increasing steadily, but with this increase there has also been a corresponding condition of progress in matters relating to public health. The average death-rate for the period 1872–81 was 18·4 per 1000, that for the period 1882–90 was 15·7 per 1000.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In twenty-eight of the largest English towns 5849 births and 4074 deaths were registered during the week ending March 28th. The annual rate of mortality in these towns, which had declined from 24·1 to 21·9 per 1000 in the preceding four weeks, further fell to 21·2 last week. The rate was 19·3 in London and 22·8 in the twenty-seven provincial towns. During the past twelve weeks of the current quarter the death-rate in the twenty-eight towns averaged 23·1 per 1000, and corresponded with the mean rate in the same periods of the ten years 1881–90. The lowest rates in these towns last week were 14·1 in Derby, 16·7 in Nottingham, 17·4 in Bolton, and 17·9 in Birkenhead; the highest rates were 29·0 in Blackburn, 29·5 in Preston, 29·9 in Portsmouth, and 34·6 in Huddersfield. The deaths referred to the principal zymotic diseases, which had been 413 and 449 in the preceding two weeks, declined again last week to 414; they included 150 from measles, 139 from whooping-cough, 39 from diphtheria, 35 from diarrhœa, 30 from "fever" (principally enteric), 20 from scarlet fever, and one from small-pox. These diseases caused the lowest death-rates in Norwich, Derby, Newcastle-upon-Tyne, and Cardiff, and the highest rates in Halifax, Portsmouth, Huddersfield, and Blackburn. The greatest mortality from measles occurred in Bolton, Preston, Bristol, Huddersfield, Portsmouth, and Blackburn; and from whooping-cough in Salford, Manchester, Huddersfield, Leicester, and Halifax. The mortality from scarlet fever and from "fever" showed no marked excess in any of the twenty-eight towns. The 39 deaths from diphtheria included 26 in London and 4 in Salford. One death from small-pox was registered in Huddersfield, but not one in any other of the twenty-eight towns; three small-pox patients were under treatment in the Metropolitan Asylum Hospitals, and two in the Highgate Small-pox Hospital, on Saturday last. The number of scarlet fever patients in the Metropolitan Asylum Hospitals and in the London Fever Hospital at the end of the week was 1059, and showed a further decline from recent weekly numbers; the patients admitted during the week were 81, against 64 and 91 in the preceding two weeks. The deaths referred to diseases of the respiratory organs in London, which had declined in the preceding four weeks from 685 to 556, further fell last week to 466, and were 40 below the corrected average. The causes of 89, or 2·2 per cent., of the deaths in the twenty-eight towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Bristol, Leicester, Sunderland, and in four other smaller towns; the largest proportions of uncertified deaths were recorded in Birmingham, Blackburn, Hull, and Cardiff.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 26·2 and 25·9 per 1000 in the preceding two weeks, rose to 26·7 during the week ending March 28th, and exceeded by 5·6 the rate that prevailed during the same period in the twenty-eight large English towns. The rates in the eight Scotch towns ranged from 14·8 in Leith and 15·4 in Perth to 32·8 in Glasgow and 33·1 in Paisley. The 698 deaths in these eight towns showed an increase of 22 upon the number in the preceding

week, and included 36 which were referred to measles, 34 to whooping-cough, 8 to diarrhœa, 7 to scarlet fever, 5 to diphtheria, 3 to "fever," and not one to small-pox. In all, 93 deaths resulted from these principal zymotic diseases, against 79 and 73 in the preceding two weeks. These 93 deaths were equal to an annual rate of 3·6 per 1000, which exceeded by 1·4 the mean rate last week from the same diseases in the twenty-eight English towns. The fatal cases of measles, which had increased from 16 to 24 in the preceding three weeks, further rose last week to 36, of which 21 occurred in Glasgow and 11 in Paisley. The deaths from whooping-cough, which had been 31 and 32 in the preceding two weeks, were 34 last week, and included 19 in Glasgow, 6 in Edinburgh, and 6 in Dundee. The 7 fatal cases of scarlet fever showed a slight increase upon recent weekly numbers; 3 occurred in Glasgow and 3 in Edinburgh. The 5 deaths from diphtheria exceeded by 2 the number in the preceding week, and included 2 in Glasgow. The deaths referred to diseases of the respiratory organs in these towns, which had been 201 and 194 in the preceding two weeks, further declined last week to 169, but exceeded by 28 the number in the corresponding week of last year. The causes of 54, or nearly 8 per cent., of the deaths in the eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 28·1 and 28·4 per 1000 in the preceding two weeks, further rose to 29·1 during the week ending March 28th. During the first twelve weeks of the current quarter the death-rate in the city averaged 30·7 per 1000, the rate for the same period being 22·7 in London and 21·7 in Edinburgh. The 197 deaths in Dublin showed an increase of 5 upon the number in the preceding week, and included 3 which were referred to whooping-cough, 3 to "fever," 2 to diarrhœa, and not one either to small-pox, measles, scarlet fever, or diphtheria. Thus the deaths referred to the principal zymotic diseases, which had increased in the preceding three weeks from 4 to 11, declined again last week to 8; they were equal to an annual rate of 1·2 per 1000, the rate from the same diseases being 1·6 in London and 3·0 in Edinburgh. The fatal cases of whooping-cough, which had been 3 and 5 in the previous two weeks, declined last week to 3. The deaths referred to different forms of "fever," which had been 4 in each of the preceding two weeks, declined to 3 last week. The 2 fatal cases of diarrhœa exceeded those recorded in any recent week. The 197 deaths in Dublin last week included 29 of infants under one year of age and 58 of persons aged upwards of sixty years; the deaths of infants showed a slight decline, while those of elderly persons exceeded those recorded in any recent week. Ten inquest cases and 8 deaths from violence were registered; and 52, or more than a fourth, of the deaths occurred in public institutions. The causes of 14, or 7 per cent., of the deaths in the city were not certified.

Correspondence.

"Audi alteram partem."

INSURANCE ON THE LIVES OF PHYSICIANS.

To the Editors of THE LANCET.

SIRS,—Having for some time past been engaged in collecting figures for making a comparison between the experiences of insurance offices of the lives of medical men and others, I have read with much interest Dr. Muirhead's letter of Feb. 10th. Dr. Muirhead comes to the conclusion that medical lives are as good as those of the population generally. Unfortunately the figures given in his letter, as far as they go, point to a considerable inferiority in the lives of the doctors. He shows that in round numbers the average duration of the two classes are the same—viz., twenty-one years; but it appears that the average age at which the medical men insured was thirty-five, and the non-medical thirty-seven. The medical lives should then have exceeded in duration the non-medical by something between one and two years; thus the medical lives were inferior to the other by something between 5 and 10 per cent. The figures which I lay before you, collected from four offices by the kind indulgence of their managers, pretty well confirm this result. The method adopted by me was as follows:—The registers of policies were searched until a medical policy was found which had resulted in a claim. Then a non-medical claim was taken out as near as possible in point of entry to the medical one, and whose former holder entered in the same quinquennium of age. I thus obtained two claims, the policies of which were taken out by two men identical (apparently) so far as insurance goes, except that one was medical and the other non-medical. The pair entered about the same date, and therefore had the same opportunity of living, and, having the same expectancy, were charged the same rates. Now, if medical lives were as good as non-medical ones, a sufficient number of such pairs being taken, the aggregations of each set should be identical in every respect with one another.

The adjoining tables give a comparison between these two sets of lives. It will be seen that at almost every age the medical lives proved inferior, and on the whole the total years lived by medical men were about 6·4 per cent. less than that lived by non-medical policy holders.

The second (derived) table shows a remarkably even result, and leaves little doubt as to its interpretation.

It may be added that all the cases classed as medical were medical practitioners described as surgeons, physicians, or in the older cases sometimes as apothecaries; no dentists were included. Also, in choosing the cases with

TABLE I. — *Comparison of the Duration of 242 Lives, Medical and Non-medical, entering approximately at the same time and at the same age; the experience extending over more than 30 years.*

	Total number entering between the ages of—							
	20 & 24.	25 & 29.	30 & 34.	35 & 39.	40 & 44.	45 & 49.	50 & 54.	55 & 59.
Number entering	8	48	51	38	29	40	20	8
Total duration (Medical)	163	1023	1103	789	656	673	297	99
Total duration (Non-medical)	172	990	1298	829	686	719	343	93
Average duration to half a year (Medical)	20·5	21·5	22·5	21	22·5	17	15	12·5
Average duration to half a year (Non-medical) ..	21·5	20·5	25·5	23	23·5	18	17	11·5

Total number of lives of each, 242. Total duration: Medical, 4803; Non-medical, 5130.

TABLE II. — *Derived from* TABLE I., *by taking Means of Ages and Durations.*

	Lives entering at the ages of—						
	25.	30.	35.	40.	45.	50.	55.
Average duration (Medical)	21	22	21·75	21·75	19·75	16	13·75
Average duration (Non-medical)	21	23	23·75	23·25	20·75	17·5	13·75

which these were paired, care was taken to avoid clerical lives, the latter being regarded as above the average. This result, disappointing as it may be in some respects, after all only emphasises the importance of the subject of insurance of medical men, to the consideration of which you have devoted so much of your valuable space during the last few months.—I am, Sirs, yours obediently,

THOS GLOVER LYON,
Feb. 24th, 1891. Medical Officer to the Mutual Life Office.

"A NEW TREATMENT AND POSSIBLE CURE FOR CANCER."

To the Editors of THE LANCET.

SIRS,—Under this heading I wrote you in June and July, 1889, communicating a method of treating cancer, which I believed to be likely to prove useful. I did not then dare to say more than that "the results obtained so far are encouraging." The time which has elapsed since making this statement has been employed in watching the effects and issues of the treatment, and in investigating the facts in other cases which have fallen under my observation, and been similarly treated. I say *similarly*, because later researches have led to considerable changes in the mode of exhibiting the remedies. In result of my experience to this date I am able to say: (1) that none of the earlier cases have relapsed; (2) that scirrhus tumours of large size and undoubted authenticity have gradually disappeared without any operative interference; (3) that the health of patients has improved under treatment, and the cachexia vanished.

I fully recognise the gravity of these statements, and I feel the responsibility that rests upon me in making them; but in face of the evidence I have obtained I am compelled to say that I tentatively believe cancer to be *curable* by this method, and I have no hesitation in again asking the profession to try it.

The exhibition of the remedies—which *must be used in combination*, for the reasons assigned in my previous letter—requires to be specially adapted to each individual case, as will be obvious to anyone who has given the *modus operandi*, as before explained, a serious thought.

The principal modifications I have made are the following:—Instead of "thallin" I use a periodohydromethyloxychinolin, because that is better borne, and seems to be more effective than the tetrahydroparaquinanisol; and I either inunct, or inject, the tumour with a papain specially prepared, because I have reason to believe that it is not the proteid elements (either the globulin, the α-phyt.-albumose, or β-phyt.-albumose, or these in combination), but the organised ferment of the papaw juice that produces the effects observed.

The scientific explanation of the phenomena (which I am still investigating) would involve too much of the bacteriological phase of the subject to be discussed here; meanwhile I reserve, until another opportunity, the expression of an opinion which I have formed as to the important part played by the papain bacillus, of Rosbach, to whom, as your readers will remember, we are indebted for our acquaintance with the properties of papaw juice by a paper read at the International Congress of 1881. I am aware that some authorities have alleged that the bacillus found in papain is identical with the bacillus subtilis, but I believe that conclusion to be erroneous; and at the proper time and place I shall be prepared to make my assertion good. However that may be, of the therapeutic value of papaw juice, or certain of its elements, as a solvent of the morbifically indurated tissues in cancer, I have no doubt, although, as I said at the outset, it is *perfectly useless* unless administered or applied in combination with an adjunct of the class which I have previously indicated.

I am, Sirs, yours faithfully,
J. MORTIMER GRANVILLE.
Hanover-square, W., March 24th, 1891.

THE EFFECT OF DEEP INSPIRATIONS ON THE HEART.

To the Editors of THE LANCET.

SIRS,—In his second Lumleian lecture Dr. Broadbent remarked: "An interesting fact in connexion with breathlessness due to dilatation of the heart is that it is often relieved by exercise of the voice. I have met with numerous instances in which a clergyman has climbed into the pulpit with the utmost difficulty, and has not only preached a sermon comfortably, but has been all the better for it." The good result, I take it, in these cases is attributable to the deep inspirations necessitated by the loud voice used in preaching; and, without touching upon the so-called suction action of inspiration upon the circulation in general, I would point out that these deep inspirations act beneficially in the following ways: (*a*) First and foremost, they favour the flow of blood *from the right to the left heart;* the right heart being thus relieved, the blood is able to flow more readily into it from the systemic and portal veins; this necessarily facilitates the flow from the systemic arteries, and consequently the left heart has less work to do. Let it further be remembered that the relief brought to a dilated right ventricle by deep inspirations must enable it the better to exercise its suction action on the veins. (*b*) Naturally the respiratory movements favour the flow of lymph by diminishing the venous blood pressure; but in addition to this indirect influence on the lymph flow, inspirations, especially when deep, have a direct influence upon it, for the diaphragm is itself a lymph pump. Now, whatever favours the lymph flow necessarily helps the arterial and venous circulation. (*c*) Lastly, it is possible that the movements of the diaphragm may exert a special influence upon the circulation of the blood through the liver. Not only do inspirations favour the flow of blood through the lungs, but they are absolutely necessary to proper pulmonary circulation, as is readily proved by holding the breath for a moment or two, when the stagnation of the blood in the right heart will provoke epigastric pulsation and cause the veins in the head and neck to swell. It is further proved by the fact that the right heart is found engorged after death from suffocation or drowning, or, indeed, whenever respiration has stopped before the heart has finally ceased to beat. And we have here, I believe, the chief factor in the production of those changes in the right heart which occur secondarily to chronic lung diseases—in all of which the respiratory movements are restricted. That such restriction is competent to produce these cardiac changes is indicated by the right heart suffering in spasmodic asthma unaccompanied by lung mischief. Thus periodic interferences with the respiratory movements are alone clearly capable of affecting the heart. The practical conclusion I desire to emphasise is that we have in the respiratory movements a means of aiding a weak circulation, and especially in those cases where undue work is put upon the right heart.

I am, Sirs, yours faithfully,
HARRY CAMPBELL, M.D.
Guilford-street, W.C., March 31st, 1891.

THE HYDERABAD CHLOROFORM COMMISSION.

To the Editors of THE LANCET.

SIRS,—In his article published in THE LANCET of March 14th, Surgeon-Major E. Lawrie, President of the Hyderabad Commission, emphasises the importance of the respiration, and totally ignores the circulation, as a guide in the administration of chloroform. Undoubtedly the respiration is essentially important, but my view, after ten years' practical experience of anæsthetics, is that the circulation is also sometimes an important guide to the anæsthetist during an operation, and often most valuable. No method of administering chloroform will ensure the uniform behaviour of all patients during the induction of chloroform anæsthesia. The action of chloroform upon a patient is influenced by mental and physical conditions as well as by disease. The effects of the chloroform upon the circulatory, nervous, and respiratory systems, especially when they are diseased, as well as the loss of blood and the duration and nature of an operation (these being the conditions that have to be met by the practical anæsthetist), influence the respiration in such a way in some cases as to make it expedient to obtain all the information that can be gathered of the extent of exhaustion, the probable power of endurance, and the general state of the patient. This knowledge is to be obtained from the respiration, the pulse, the pupil of the eye, the sensibility of the cornea, and the complexion, all of which may be under observation at the same time without discontinuing the chloroform, when it is administered in the manner described by me in a paper read before the West London Medico-Chirurgical

Society, and which is fully reported in THE LANCET of March 14th. The condition of the muscular system, as to relaxation, is also sometimes useful. An anæsthetist who relies on all these sources for information will sometimes be able to continue an administration of chloroform when, if he relied upon the respiration solely, he would feel bound to discontinue it. I have on several occasions had the greatest difficulty in satisfying myself that respiration was in progress at all, especially in connexion with some operations upon the skull for depressed fracture or other condition in which the functions of the brain were greatly impaired, and have found the pulse most valuable as a guide in such cases, justifying me in supplying sufficient chloroform to prevent reflex movements of the patient occurring. As long as respiration is unimpaired and there is no cyanosis it may not be necessary to go further for information, but early in the progress of administration the breathing may be accompanied by stertorous noises—not true stertor,—the pupils be dilated or the corneal reflex abolished, and yet the anæsthesia may not be sufficient for operation, and in such circumstances the pulse will be found quick perhaps, and not the slow pulse of complete chloroform anæsthesia. When an operation has been some time in progress the respiration may still be good while the patient may have the appearance of extreme exhaustion, and the pulse will then enable the anæsthetist to judge whether it is necessary to hurry or close the operation, or whether stimulants are imperatively called for. Shallow respiration is not uncommon and, when the respiration only is relied upon, dangerously misleading, often when not appreciated giving rise to sudden and alarming symptoms. In practice each of the guides mentioned is of great service, and without them operators would often be disturbed, and sometimes unnecessarily prevented from completing their operations. The following case throws great light upon the effect of chloroform upon the heart and respiration.

In January, 1891, J. B——, aged fifty-one years, came into the theatre for radical cure of hernia, and it was my intention to give him chloroform; but on seeing him, as his appearance presented venous congestion, I gave him ether. After about a quarter of an hour of the operation there was so much saliva and mucus excited by the ether that it was impossible to keep the patient properly under, and I therefore changed to chloroform, which I administered with extra care, for the reason already stated—i.e., in addition to simply satisfying myself that the respiration was good, I proceeded with the sprinkled lint lying on the separated fingers of my right hand in front of the mouth, which enables one to feel the force of expiration; with my left middle finger on the left temporal pulse and my left thumb holding up the left upper lid of the patient, and testing the corneal reflex when necessary, watching the respiratory movements of the abdomen (which was exposed), the complexion of the face, and the pupil of the eye. After about half an hour I suddenly missed the temporal pulse, and found it was also absent from the wrist, notwithstanding that the respiration continued. After a few moments the pulse returned, and the pharyngeal reflex being present I gave two teaspoonfuls of brandy in small quantities, which were swallowed. Then continuing the chloroform, guardedly as before, after twenty minutes the pulse ceased again, and I asked the nurse to give an enema of half an ounce of brandy with water, called the attention of those around to the absence of pulse and the continuance of respiration, which they observed before the respiration ceased, when a little artificial respiration soon so far restored the patient that the operation was continued and completed in another twenty minutes. During this latter time a very little chloroform only was given when the patient had so far recovered as to call out loudly. The patient afterwards told me he felt nothing of the operation. This patient's heart was, so far as could be ascertained, practically sound. Here then was an operation taking place under chloroform, during which the pulse of the patient undoubtedly failed before the respiration on two occasions, the pulse recovering on the first without cessation of respiration, and the respiration failing on the second occasion some seconds after the pulse, and while it was still not to be felt.

I have endeavoured to show in this letter the importance of the pulse as a guide to the anæsthetist, under some circumstances, during chloroform administration; and it is not my intention to express an opinion as to which of the two, the respiration or the circulation, invariably ceases first in death from chloroform, believing, as I do, that it is sometimes one and sometimes the other.

I am, Sirs, yours faithfully,

RICKARD W. LLOYD.

Russell road, Kensington, W., March 15th, 1891.

THE TREATMENT OF CHRONIC INFLAMMATION OF THE UTERINE APPENDAGES.

To the Editors of THE LANCET.

SIRS,—The question whether the majority or minority of inflammatory lumps in the pelvis tend to spontaneous cure is one as to which each person who has opportunity must form his own judgment. An investigation in the way proposed by Mr. Tait would not further our knowledge. If, as I expect would happen, there proved to be little difference of opinion, in particular cases, between Mr. Tait and some one of an opposite view as to the general question (I do not know who appointed me the representative of such), it would still be possible for anyone who operated frequently to say that there was some exceptional cause which brought to him a large number of incurable cases; and, as Mr. Tait has clearly foreseen, it would still be open to malevolent critics to say that the surgeon's opinion as to the course without operation would be less favourable in cases in which he would be the operator than in those not under his own care. I need scarcely say that the London Hospital is a public institution, and if Mr. Tait likes to visit it, I shall be very glad to have the benefit of his opinion and advice; but I hardly think that, from his point of view, he will find the advantage commensurate with the trouble. I believe, if he will pardon my saying so, that he would do more to convince the profession if he would add to his great services to medical science by publishing more detailed and exact reports of his own cases. So far as I am concerned, this correspondence is now at an end.

I am, Sirs, yours faithfully,

Harley-street, March 24th, 1891. G. ERNEST HERMAN.

FACTORY SURGEONS.

To the Editors of THE LANCET.

SIRS,—In Clause 19 of his Factory Bill Mr. Matthews proposes to abolish the office of certifying factory surgeon, and if our services are to be retained an immediate and united effort must be made by certifying surgeons everywhere throughout the country. An appeal has been made by the Association of Certifying Surgeons, and circulars have been sent to hundreds of certifying surgeons asking them to send to the secretary of the association a list of rejections made by them in their various factories. And with what result? Although there are nearly 1200 certifying surgeons in the country, yet only thirty-seven have taken the trouble to send lists of rejections. This carelessness is disheartening when we consider how our opponents are using every possible means for our extinction. If our office is abolished it will certainly be in a great measure due to the apathy of the mass of certifying surgeons themselves. The Standing Committee who have the Bill in hand do not meet again till April 9th, so there is still time for useful action. I would urge all certifying surgeons to do two things—(1) send at once to the secretary of the Association (Dr. Holmes, Ouselhurst, Radcliffe, near Manchester) a list of cases rejected during the past five years, and (2) to bring all the pressure they can to bear on members of Parliament to oppose Clause 19 of the Factory and Workshops Bill.

I am, Sirs, yours faithfully,

JOHN BARR, M.B.,

Rishton, Blackburn, March 24th, 1891. Certifying Surgeon.

"DIPHTHERIA IN ESHER."

To the Editors of THE LANCET.

SIRS,—It is quite true that this hitherto healthy village has for some months been suffering from diphtheria. I attribute the outbreak entirely to the foul smells emanating from the man-holes and interceptors of the new main drains, which have been insufficiently flushed. This sewer was put into use last summer. Up to that time diphtheria

was unknown here. We had a great many mild cases last autumn. The first severe cases took place in September in a gentleman's well-ventilated house situated between two man-holes, which gave out abominable odours. The mother, five children, and governess took the disease; one child died. They had no connexion with the village school. Since then the epidemic has been more severe, and I have lost four other children in my practice. These were in families in which some of the children attended the National Schools. I do not think the fault lies in the sanitary state of the schools, but that children having incipient diphtheria communicated it to the other scholars and the mistresses. The school is now shut up, and most of the foul interceptors (so called) closed, so I hope we may see an end of this distressing epidemic. The fault has been in using the sewer before there were sufficient flushing tanks.

I am, Sirs, yours faithfully,

Esher, March 30th, 1891. CHARLES W. IZOD.

HOSPITAL REFORM.

To the Editors of THE LANCET.

SIRS,—After the perusal of your leading article of March 7th, in which you support the conclusions of the Birmingham Committee on Hospital Reform, it was a little strange to find reported in the same number Mr. Barker's assertion that "complaints against out-patient departments come from a very undesirable fringe of the profession." I must confess to belonging to this abused fringe, which, though "very undesirable," must be considered ornamental, as it includes THE LANCET and a not inconsiderable portion of the profession. But I venture to think that Conclusions IV. and V. of the committee referred to call for the special attention and criticism of the profession. The necessity for medical reform may be obvious to most of us, but it is as necessary in the dispensary as in the hospital. It will be a grave pity if, in curing hospital abuses, we increase those of the dispensary. It is a fact that many dispensaries make very free use of hospitals without subscribing a halfpenny towards their expenses. I know of one provident dispensary the boasted success of which is fairly attributable to such practices. This institution has over 20,000 members, and its scope is not limited by any wage limit system. It may be reasonable for the dispensary doctor to send his cases of strangulated hernia and other awkward ailments into the hospital. It is certainly convenient. But some acknowledgment should be made for the accommodation afforded. It does not seem fair that the hospital should have to treat gratuitously a number of the most serious dispensary cases, from whom the dispensary has been receiving premiums, for assurance against illness, for a number of years. Of course, if we can secure joint action of hospitals and dispensaries with an agency for investigation into the circumstances of both classes of patients, we may put a check upon abuses; but experience should warn us that dispensary managements are apt to attempt too much. Becoming greedy for a financial success, they commence touting for patients, repudiate the wage limit system, and help to turn the noblest of professions into the most miserable of trades. Under such circumstances the dispensary, as I have tried to show elsewhere, is, even to the public, a curse rather than a blessing. To the self-respecting general practitioner who holds to the old traditions of medical etiquette it is an unscrupulous opponent. Bound by no traditions, with the conscience of a committee, it employs agents, scatters advertisements broadcast, and invites all men to purchase physical salvation for 1*d.* per week. Small wonder if some of the poorer members of our profession follow its example. They have not the ghost of a chance in competitions with such an institution. It behoves us then, before attempting to relieve the congestion of the out-patient department at the hospital by means of a new system of dispensaries, to take security that such a system will be conducted upon equitable principles, and to insist upon the adoption of a reasonable wage limit.

I am, Sirs, your obedient servant,

March 18th, 1891. F.R.C.S.

ARREST OF SYMPTOMS IN GENERAL PARALYSIS.

To the Editors of THE LANCET.

SIRS,—I was much interested in Dr. Adam's letter in THE LANCET of last week on "The Arrest of Symptoms in General Paralysis," as I have recently had two cases under my care which exemplify his remarks. Probably it would be better to use the term "remission" rather than "arrest," as, if the cases are those of general paralysis, the disease is almost certain to reappear.

Dr. Julius Mickle, in his well-known work on this disease, points out that Sauze considers that there are three classes of remissions. The first, in which there is remission of mental and motor symptoms simultaneously; the second, in which the remission pertains to mental symptoms only; and the third, and by far the rarest, in which the motor symptoms subside, with no mental improvement. My first case—which on admission I took to be one of general paralysis, but, after more careful examination of symptoms and history, I marked down as one of those peculiar cases of alcoholic mania resembling in almost all respects general paralysis—got so far well that he was discharged as recovered after a stay of six months. Both mental and motor symptoms had apparently quite subsided. However, my original diagnosis was confirmed, for he came under my care again nine months after his discharge with definite symptoms of general paralysis, and one severe fit of an epileptiform character, and rapidly passing into apoplexy, the disease caused the end of his life four months after his readmission.

In the other case there was a *quasi*-remission of both mental and motor symptoms, and though we knew he still had some grandiose delusions, yet he was able to control them to such an extent that no one talking to him for hours together upon general topics would have found anything wrong with his intellectual powers; and his motor symptoms had much improved. The almost inevitable relapse has taken place, and one single fit has left him paralysed in his lower extremities. Baillarger considers that remissions are more general when the disease commences with an acute maniacal attack, but Dr. Mickle explains this on the hypothesis that the various forms of simple insanity often complicate general paralysis at its onset, of which form mania is the one most likely to terminate in recovery. To my mind, these remissions, unless rightly diagnosed as such, are a grave source of danger to the family of the patient. We discharge such a case, and probably a gradual relapse takes place, and before the relapse is realised, and steps can be taken to place the case under proper control, instead of "putting his house in order," as Dr. Adam implies he may do, he lands his family in hopeless ruin by his extravagance, if even he does not do more, and commit some terrible crime.—I am, Sirs, yours faithfully,

Bath, March 29th, 1891. LIONEL A. WEATHERLY, M.D.

QUARANTINE AT NEW YORK.

To the Editors of THE LANCET.

SIRS,—Several Sicilians, all healthy, and coming from uninfected districts, took ship at Palermo for New York on Jan. 11th. Those who required it underwent vaccination with calf lymph. One man, vaccinated on the 22nd or 23rd, I detected on the 30th with a suspicious vesico-pustular eruption here and there, slightly umbilicated on arms, face, back, and abdomen; none on mucous membrane of mouth, throat, or conjunctivæ. This eruption commenced on the 26th on the arms as vesicles. He had had no vomiting or pain in the back, only a slight headache, and ate well. He had three large unusually well-marked vaccination vesicles on the right arm. Seeing that the incubation period of small-pox had been passed while at sea, that none of the other Sicilians or his immediate steerage neighbours were ill, and well weighing the above facts, I put the case down in my official log as one of vaccinia, together with my reasons. On arrival at New York on Feb. 8th the case was taken ashore, brought back, taken ashore again, experts and inspectors from the city called in, and this dilly-dallying went on for four days. It was decided to be a case of small-pox. Those immigrants vaccinated by me were allowed to land, the rest, all of whom showed scars resulting from a vaccination within eight years, were transferred to Hoffman Island for fourteen days. But by this date (Feb. 11th) seventeen days had elapsed since the man's eruption had appeared (Jan. 26th), and still not a single case of small-pox had occurred, the five men who slept around him being in perfect health. During the inspection I picked out two somewhat similar vaccinated cases, a boy and a woman, that had twice passed unnoticed by the official deputy, who, however, deemed them of sufficient importance to take ashore. The boy's case was stated to be due to vermin, but neither

acarus scabiei or pediculi corporis were present; and the woman's to her reinoculating herself by scratching all over her body from her vaccinated arm. Now is such a thing probable, nay, possible? I told the official I should like some unbiased opinion. Next morning these two cases were taken ashore early without my knowledge and permitted to land. They went privately, and not in the tug with the others. After this, in my opinion, manufacturing of a case of small-pox, after this decision of the powers that be, how did they act? Verily, like to a wholesale small-pox manufactory. Three saloon passengers with whom I had been in close contact, one of them sharing my cabin, were allowed to land, not a question being asked. The captain, with permission, went to New York in the company's tug, used for passengers by other ships, and constantly plying about harbour. The pilot daily went to and fro between his family and the ship, and, to crown everything, we—i.e., all hands—were free to proceed unquestioned and unexamined—we, including the Italian and Sicilian stewards, who had been in constant hourly communication with the immigrants. Some sulphur was burnt in the steerages, none in the room on deck where men had been placed. A large pile of immigrants' mattresses on deck, not disinfected in any way, were passed into Brooklyn. I claim that if the authorities really thought the case one of small-pox, their proceedings were illogical, inconsistent, and desperately dangerous to public health; whereas, if they thought otherwise, great unnecessary expense was imposed on the Company, and a vast amount of intolerable inconvenience on the immigrants by their detention.

I am, Sirs, yours faithfully,

J. E. S. BARNETT, M.R.C.S., L.R.C.P.,
Surgeon to ss. *Scotia*.

Ditchling-road, Brighton, March, 1891.

MORTALITY OF MEDICAL MEN.

To the Editors of THE LANCET.

SIRS,—In the article in THE LANCET of last week on the Medical Registers for 1891 it is stated that "the Registrar and Dr. Ogle are at serious variance as to the mortality of medical men." Permit me to point out that no contradiction exists. The Register includes medical men resident in all parts of the United Kingdom, as well as many abroad, and doubtless some who have died in previous years; while Dr. Ogle's figures are based on the number of medical men enumerated in England and Wales at the census of 1881. Dr. Ogle's death-rates for England and Wales relate to the three years 1880–82; according to the figures in the Medical Register the mean death-rate for those years was 23 per 1000, which, after allowance for imperfect information as to deaths occurring abroad, and for possible differences of mortality in the several divisions of the United Kingdom, does not vary seriously from Dr. Ogle's 25 per 1000. Further, the death-rate as shown by the Medical Register was as high as 28 per 1000 in 1885, while in the fourteen years 1876–89 it averaged rather more than 23 per 1000. The exceptionally low mortality recorded among the medical profession in 1890 is certainly remarkable, both in comparison with previous years and in connexion with the fact that the general death-rate in England and Wales was higher in that year than in either of the years 1887-8-9; but it is remarkable as an exception, and not as being at variance with the mortality at another period of the resident English part of the profession.

I am, Sirs, your obedient servant,

March 31st, 1891. A. C. WATERS.

THE NON-EMPLOYMENT OF MEDICAL MEN BY MEDICAL BODIES.

To the Editors of THE LANCET.

SIRS,—We have repeated and, it must be admitted, justifiable bemoanings from the ranks of the medical profession regarding the illiberal manner in which its services are recognised as regards remuneration &c.; yet I assert without fear of contradiction that there is no other profession that does so little, when it has the chance, for its own *confrères* as the medical profession; and in support of such assertion it is only necessary to point to what daily occurs—as, for instance, whenever a body of medical men form themselves into a society or committee &c., it may be taken as granted that if the office of secretary, registrar, &c., is to carry with it any emolument it is not to a medical man it would be given. There are too many instances of such ungenerous actions of medical men towards each other in such cases. If it is argued that it is a *lapsus mentis*, it forms no excuse, for the same might be said by anyone who fails to befriend another. I do not wish to particularise instances—such would not further in any way the fact which I draw attention to. We have barristers, retired military men, and civilians filling positions as librarians, secretaries, registrars, &c., which posts could and *should*, in such purely medical bodies, be held by medical men. I would like to hear of any military or legal society or institution, devoted purely to the researches or duties of either profession, that gives remuneration in a single instance to any medical man in such capacity as cited above; or, further, that would not sneer contemptuously at even the idea of leaving members of its own profession out for that of another, such as the medical.—I am, Sirs, yours truly,

March 25th, 1891. EBLANA.

MANCHESTER.

(FROM OUR OWN CORRESPONDENT.)

The Royal Infirmary and Owens College.

Non possumus is the final reply of the Infirmary, as represented by its board of management, to the College proposal to erect a new hospital in Victoria-park. The following is the exact terms of this reply: "The board of management do not feel themselves justified either in appealing to the public for money or in appropriating any part of the funds of the Royal Infirmary towards the erection and maintenance of such hospital. The board desire to emphasise the fact that they are already possessed of an ample freehold estate centrally situated on which the Infirmary can be extended, without entailing on themselves extraneous obligations by the establishment of a dual control calculated to interfere with existing executive and administrative arrangements. Moreover, they think it neither wise nor desirable to entertain any scheme which will in their judgment, interfere with the interests of the sick poor, for whose benefit the Infirmary was established." Whether this ultimatum will be endorsed by the public, as represented in the general body of subscribers, remains to be seen. Fifteen or sixteen years ago the then board of management pronounced as decisively for the removal of the whole of the infirmary from its present site into Oxford-road, near the spot now offered for a new building, and this was as decisively vetoed by the subscribers, and a new board put in power. Without doubt public feeling is against any further curtailment of the present small open space around the Infirmary, and there are strong arguments in support of the contention that "the sick poor" would benefit by the establishment of a new building out of the centre of the city in the purer air of the Victoria Park. The advantages to the medical school would be considerable from a new hospital nearer the College, and whose staff would be more closely united with the College than at present is the case. For the present a deadlock exists, the ultimate result of which it is at present difficult to forecast.

Owens College.

At the recent half-yearly meeting of the Court of Governors the rapid and continuous growth of the medical department was prominently noted. The present number of medical students on the books is 348. The arts, science, and law departments show but a slow advance compared with the medical department for the past few years. Some time since it was reported as imperative to take steps to enlarge the accommodation of the medical school, and an appeal is to be made to the public for no less than £50,000 for this object. On the same day, at the above meeting, a marble bust of Dr. Greenwood, lately principal, was publicly presented to the College in the library. It has been subscribed for by the Associates, and is from the chisel of Mr. Onslow Ford, A.R.A. Mr. Broadfield, in making the presentation, alluded in graceful terms to the long life's service of Dr. Greenwood to the College, and especially to the warm feeling of personal friendship and kindly courtesy that always existed between him and the students.

Society of Officers of Health.

At the annual meeting of the North-Western Branch of the Society of Officers of Health, Dr. Thomson of Sheffield

was appointed president for the ensuing year. A discussion took place upon the proposed Factory and Workshops Act. Mr. Barr of Bury stated that there were in Lancashire alone children and young persons at work in mills to the number of 139,000 "half-timers" and over 300,000 "whole-timers," also that 1319 children per annum had been returned as unfit for work. Upon these and other grounds it was resolved to petition against the abolition of factory surgeons.

Cremation.

The successful establishment of a crematorium in Manchester is now assured, though the whole of the required funds have not yet been quite subscribed. The promoters do their best to bring the subject before the attention of the public, and at a public meeting held recently in Chorlton-cum-Hardy (one of our suburbs) the Rev. R. E. Healy, rector of St. Thomas's, presiding, a resolution was carried recording hearty approval of the system of cremation as a means of disposal of the dead in large communities.

Impure Air.

The committee appointed to make a scientific investigation into the impurities of Manchester air have issued a preliminary report, which, amongst other things, states that with a prevalence of fog the mortality from respiratory diseases at once showed a marked increase. From experiments made during three days of fog it was calculated that in the neighbourhood of the infirmary there was carried down 6 cwt. of sulphuric acid per square mile. No wonder that leaves and trees rapidly die here.

The late Alderman Schofield, J.P.

Amongst those who, in the early days of sanitary reform, did good work for Manchester in remedying sanitary maladministration or neglect, the name of the late Alderman Thomas Schofield stands out prominently. For more than twenty years he was chairman of the Health Committee, and though of late years the methods pursued by it have been the subject of much criticism, everyone gave him credit for acting in a thorough and *bonâ-fide* manner in his efforts to grapple with many of the problems to be dealt with by the sanitary administrators of a large community like this. For many years, also, he took a warm and active interest in the Royal Infirmary and its allied branches, as well as other charitable institutions of the district.

Manchester, April 1st.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

Serious Charge against a "Professor."

A MAN named Edward Moross, aged thirty-seven, who has been lecturing in Newcastle for some time in the Central Hall and advertising consultations free, under the style of "Professor Moross, M.E.," was brought up at the Newcastle Police-court on Saturday on warrant, charged with having committed a rape on Isabella Burnley, a domestic servant aged seventeen. The prosecutrix said she arranged with the accused to have six private treatments for deafness for two guineas. She complained to her sister of what happened at the consulting-rooms of the accused. Mr. Baumgartner, the police surgeon, stated that he had examined the prosecutrix, and her condition might be due to natural causes or to what she alleged. Prisoner was further charged with having indecently assaulted Florence Crossley, eighteen years of age, at the same place. She stated that there was an agreement with the prisoner that she was to be treated for neuralgia in the face in the presence of her sister. The fee was to be five guineas. The prisoner, however, asked her to come on the 14th ult. to his consulting-rooms, and said her sister need not attend. He, it was alleged, closed the door of his consulting-room when she went in. There was only a latch on it, but there was a curtain between the door and the interior, and she alleged he indecently assaulted her. The prisoner was remanded, and the magistrates refused to accept bail.

The Barber-Surgeons and Chandlers of Newcastle.

The following "items" are culled from a continuation of the paper read to the Newcastle Society of Antiquaries by Dr. Embleton, and referred to in my former notes: "Itm. for wyne and sugar at our dynners, 16*s.* 6*d.*; item. for beire after dynner, 4*s.*; itm. for tobacco, 1*s.* 6*d.*; itm. for the musick's dynner, 3*s.*; item. geven to the musicks, 5*s.*; itm. for beire the next day at brickfast, 4*s.*; itm. geven to three travelers' cirurgions, 6*s.*; itm. to the mayd, 1*s.*; itm. geven to the pore, 2*s.*; itm. that night in wyne at George Horsler's, 6*s.* 6*d.*; itm. on gallon of brunte claret at George Mallabarre's buriall, 4*s.*"

Newcastle Hospital for Women.

The Newcastle Hospital for Women was founded in 1866, and until recently was carried on in conjunction with the lying-in hospital, but its removal was necessitated by the influx of patients (now about 3000 yearly), and a successful bazaar in its interests was held last week, having been opened by the Mayor.

Cumberland.

The question of appointing a medical officer for the county of Cumberland is said to be under the consideration of a committee of the County Council. The terms of appointment suggested are that the county medical officer should devote his whole time to the service of the county, that he should hold the office at the pleasure of the Council, and that he should not be entitled on retirement to a pension or superannuation allowance. It is to be hoped that the salary (which is not mentioned) may be in proportion to the responsibility of the office and the extent and importance of the county.

The Pork-pie Poisoning Case in Carlisle.

The Medical Report of the Local Government Board includes a paper by Dr. Klein on a case of poisoning at Carlisle, which excited considerable attention about a year ago. Dr. Klein had submitted to him samples of pork and of gravy stock from the same source as the food which was more than suspected of having caused the outbreak of illness. As to the pork, it was known to be from the same animal or animals which was or were believed to have caused the trouble, but of the gravy it could only be said that it came from the same establishment. Mice were fed on the gravy and bread, also on the pork. Bacilli in gelatine cultures were obtained from the bodies of these mice, and used for experiments on other mice. Dr. Klein thus sums up:—"We have here to do with a true infective disease, producible by feeding animals with given samples of gravy stock and pork, and capable of being propagated by a particular microbe in artificial culture from the bodies of rodents fed with samples. The microbe here described is not the same as that described by me ten years ago in connexion with the Welbeck and Nottingham meat poisoning, nor is it identical with either of those to which veal and pork poisoning has been referred by me in recent reports to the medical officer. It is an altogether different species, as will be clear from my account of its morphological and cultural character."

The Silloth Convalescent Institution.

The annual meeting of the Cumberland and Westmorland Convalescent Institution at Silloth was held last week, the Bishop of Carlisle presiding. It was shown by the report that during the year the number of patients admitted was 647, as against 566 in 1889. The report of Dr. Leitch showed that 527 patients gained weight and 66 lost weight, 22 left *in statu quo*, and 32 had left before their time had expired.

Sunderland Eye Infirmary.

At the annual meeting of the Sunderland and North Durham Eye Infirmary 1593 cases, it was stated, had been dealt with during the past year. The new building to be erected in Stockton-road has received support from the working men of Sunderland to the handsome amount of over £800.

Newcastle-upon-Tyne, April 1st.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Edinburgh Sick Children's Hospital.

THE directors have decided to rebuild this hospital on its old site. There were hopes that it might have been acquired for the extension of the Royal Infirmary; but if the decision of the Sick Children's Hospital directors is final,

these hopes will be disappointed. The site is considered by many as not the best for a children's hospital, the situation of the building at present used for the accommodation of the patients being regarded as much more beneficial to the general health of patients and staff than the old site was.

Health of Edinburgh.

The mortality last week was 122, making the death-rate 23 per 1000. Diseases of the chest accounted for 35 deaths and zymotic causes for 15, of which 3 were due to scarlatina, 4 to measles, and 6 to whooping-cough. The intimations for the week were—typhoid fever, 6; diphtheria, 7; scarlatina, 17; measles, 91.

Honorary Degrees.

The Senatus Academicus of Edinburgh University has offered the degree of LL.D. to the following amongst others: John Beddoe, M.D., and Sir George M. Humphry, M.D.

Anderson's College Medical School.

At a meeting of the governors, held within the office of the secretary, Mr. John Kidston, West Regent-street, on March 25th, T. Kennedy Dalziel, M.B., C.M., F.F.P.S., was appointed to the chair of Medical Jurisprudence, vacant by the resignation of Dr. Eben. Duncan; and D. Campbell Black, M.D., L.R.C.S., F.F.P.S., was appointed to the chair of Physiology, vacant by the resignation of Dr. Christie.

March 30th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

DUBLIN.

Steevens' Hospital.

MR. WILLIAM COLLES, ex-president of the Royal College of Surgeons, and Surgeon-in-Ordinary to Her Majesty in Ireland, has resigned the senior surgeoncy of this hospital, to which he has been attached since 1834. In that year he was elected house surgeon, and in 1841 visiting surgeon, or a service of upwards of half a century. The Board of Governors have elected Mr. R. L. Swan, F.R.C.S., to the vacancy. Mr. Swan some years since was resident surgeon, and since 1876 has been surgeon to the Orthopædic Hospital, and is one of the examiners in anatomy at the College of Surgeons.

Assault on a Prison Surgeon.

At the Cork Spring Assizes last week, before Lord Chief Justice O'Brien, Ellen Hurley, an inmate of the city female prison, pleaded guilty to an assault on Mr. Thomas Moriarty, medical officer of the prison, by striking him with a bottle under the ear while inspecting the prisoners last month. The wound was a severe one, and had to be stitched. She was sentenced to twelve months' imprisonment with hard labour.

Charge against a Medical Practitioner.

At the Northern Police Court, Dublin, last week, a medical practitioner was prosecuted by the Registrar-General for having signed a certificate of death which contained a false statement. It appeared that the defendant stated that he was registered in Ireland as a medical practitioner, which was not the case, he having been registered after he gave the certificate. There was also an inaccuracy as regarded the duration of the illness of the deceased person. The magistrate held that the offence was proved, and inflicted a fine of £5.

Health of Ireland for December Quarter.

During the December quarter of last year the births registered were equal to an annual birth-rate of 20 per 1000, and the deaths to 16·2 per 1000. The birth-rate was 1·7 under the average for the corresponding quarter of the previous ten years, and the death-rate shows a decrease of 0·4. The public health for the quarter may be regarded as satisfactory. The principal zymotic diseases were under that for any quarter since 1886, and were much below the average for the fourth quarter of the year. Measles caused 33 deaths; scarlatina 91, against an average of 246; typhus fever 100; whooping-cough 232, or 123 below the average; enteric fever 216, or an excess of 12. Compared with those for the corresponding quarter of 1889, the returns of pauperism show a decrease of 1684, or 3·8 per cent., in the average number of workhouse inmates on Saturdays during the quarter, and an increase of 388 in the average number of persons on out-door relief.

Mr. F. W. O'Connor, F.R.C.S., died on March 26th at George-street, Limerick, from an attack of pneumonia, aged forty-nine years.

BELFAST.

The Ulster Medical Society.

At the last meeting of the Ulster Medical Society, Professor Sinclair read a paper on "Intestinal Obstruction," in which he discussed the causes, the diagnosis, and treatment (medical and surgical) of the conditions underlying the symptoms. He showed a young man who had been suffering from obstruction of the bowels, who had been rescued from death by the following operative treatment done by him. After opening the abdomen, Professor Sinclair divided a series of fibrous bands, tying down the bowel; but in order to reduce the ileum (the part constricted) he was obliged to open it and remove a quantity of liquid fæces, after which he stitched up the aperture with Lembert's sutures and closed the abdomen. The patient recovered, and was exhibited to the members of the Society. An interesting discussion followed Dr. Sinclair's paper.

Belfast Ophthalmic Institution.

From the medical report presented by Dr. Walton Browne at the annual meeting of the supporters of this hospital, held on Monday last, I learn that 1662 cases were treated during the year; of these, eighty-four were intern and the remainder out-patient. Eighteen senior medical students are receiving clinical instruction, so that the hospital is performing a double duty: attending to the sufferings of the poor and at the same time acting as a training school for students in the diseases of the eye, ear, and throat. Special reference was made at the meeting to the lamented death of Mr. Samuel Browne, who was connected with the hospital for a period of forty years. A resolution was passed in which the meeting placed on record the loss they had sustained in Dr. Samuel Browne's death.

Hospital for Infectious Diseases.

In one of the local morning papers attention is again drawn in a strong article to the great want in Belfast of a hospital for infectious diseases provided and maintained by the municipal rates. What has been done in this direction in Glasgow and Edinburgh is pointed out, and the necessity for the removal of the Union Fever Hospital from its present site to a more isolated and less crowded district is urged.

April 1st.

PARIS.

(FROM OUR OWN CORRESPONDENTS.)

The Supply of Morphine to Morphinomaniacs.

MORPHINOMANIA being recognised to be on the increase in France, medical men have very generally charged pharmacists with supplying the drug somewhat too liberally to the unfortunate wretches who have become victims to this passion. It is surmised that a prescription is made to serve for years, and it is thought that if the renewing of that document were made compulsory at stated intervals this social evil might be curtailed in its extension. Paris chemists, who as a body are estimable members of society, resent this charge, and the Benefit Society of the First-class Pharmacists of the Department of the Seine appointed a Commission to make inquiries on the subject. The Commission reports that, however true the charge may have been years ago, when morphia commenced to be injected hypodermically, very few pharmacists now contravene the law forbidding such a practice. The Commission, however, formulates the charge against certain wholesale druggists, who, it is alleged, do not hesitate to forward large supplies to non-professional customers. It is also stated that much of the drug comes from beyond the frontier either as contraband, in letters, or even openly by post or rail.

New Honours for Sir Spencer Wells.

At the last meeting of the Académie de Médecine there were elected two new recruits to the ranks of the foreign associates of this distinguished body—viz., M. Deroubaix of Brussels, and our own eminent compatriot, Sir Spencer Wells. Most of your readers will, with myself, wonder why the latter should, on the first election, have obtained only four votes as against forty-six accorded to his rival. At the election for the second vacant place, Sir Spencer Wells was, however, elected unanimously.

When will the New Medical Law come into Operation?

In my letter last week I communicated to the readers of THE LANCET the gist of the new law on the practice of medicine which had been passed by the Chamber of Deputies. Certain paragraphs in the measure relating to the right of doctors practising in remote districts to dispense medicines were reserved for consideration until the new Pharmacy Act was discussed. The Medical Act having been passed at the first reading, it was hoped that a similar piece of good fortune awaited the Pharmacy Bill. Such a hope was illusory, for the Chamber having refused to vote urgency for the latter measure, a second reading became necessary. It is certain that the Senate will decline to consider the Medical Bill until the Lower House has made up its mind on the paragraphs reserved. Hence a serious delay, and medical reformers are beginning to despair. It appears that red-tapeism is as much a French as an English article! In connexion with the subject, I may mention that the Minister of Public Instruction has just submitted to the consideration of the Superior Council of his department a project calculated to reorganise the purely preparatory studies in the medical curriculum. This scheme provides for the creation of a special degree for medical aspirants, to be styled *Baccalauréat ès Sciences Naturelles*. The preparatory scientific studies, instead of being conducted, as at present, at the Faculty of Medicine, will take place in future at the Faculty of Sciences. This new regulation will allow four entire years to be exclusively devoted to medical studies properly so-called.

A Medical Funeral.

Last week there died, of infectious broncho-pneumonia, one of Professor Brouardel's *internes* at the Charité Hospital, the disease having been contracted in the wards. The defunct, Charles Louis, was an indefatigable worker and a most promising student, and as such, and on account of his pleasing manners, was greatly beloved. The respect in which he was held is proved by the numerous and distinguished company who escorted his remains to the Gare du Nord, *en route* for his native village, Crépy-en-Valois. Amongst the mourners there were noticed Professor Brouardel, Drs Budin and Horteloup, and numerous hospital physicians and surgeons, Dr. Peyron, Director of the Assistance Publique, and the directors of the Pitié, Bichat, and Charité hospitals, besides a deputation of *internes* and of pupils of the nursing school of the Pitié, who had enjoyed since 1888 the privilege of the teaching of the deceased. At the station touching words of adieu were pronounced by Dr. Peyron, Professor Brouardel, and M. Chipault, the latter being the mouthpiece of the *internes* of the Charité. Amongst the wreaths sent was one from Professor and Madame Brouardel.

The French Surgical Congress.

About three hundred French and foreign surgeons were present at the International Surgical Congress held in Paris last week, among whom were Sir Spencer Wells, Mr. Victor Horsley, Mr. Lawson Tait, Mr. Broadhurst, and Mr. Godwin. The Congress was opened by Dr. Guyon, who read a paper on the Progress of Surgery in Modern Times. Mr. Victor Horsley read a paper on the Operation of Trephining.

Paris, April 1st.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

Measures against the Spread of Tuberculosis.

A LITTLE tract of fourteen pages, entitled "The Opinion of the Royal Prussian Scientific Department for Medical Affairs regarding Measures against the Spread of Tuberculosis," has been published in obedience to orders by the Berlin police, which at the same time recommends a broad sheet entitled "Measures against the Spread of Consumption" to public notice. The contents of the latter are as follows: "Consumption of the lungs and larynx (tuberculosis) is conveyed to healthy persons by the tubercle bacilli contained in the expectorated sputum of patients; if the sputum dries, it becomes dust, and is thus inhaled. The excreta of such patients are capable of causing mischievous effects in the same manner. By rendering the sputa and excreta harmless the spread of consumption can be prevented. In the dwellings of consumptives and in all houses, on the stair-landings, but especially in buildings and public rooms (hotels, restaurants, places of amusement, assembly rooms of every kind, schools, &c.), spittoons of strong smooth glass, porcelain, earthenware, or enamelled iron, twenty to twenty-five centimetres in diameter, five centimetres high, with smooth edges a little bent round, supplied with water to a depth of from one to two centimetres, with the distinctly legible inscription on the outside, "Spittoon for coughers," should be placed in large numbers. Evaporated water must be replaced; the spittoons are emptied into the closets and cleansed daily with boiling water. The sitting-rooms and bedrooms of consumptive persons must be furnished only with washable curtains, table-covers, and the like; must be without carpets on the floors, without woollen carpets on the stairs leading to them, and must contain as little padded furniture as possible with washable and easily removable covers; elastic iron garden furniture with washable covers or movable cushions is the best substitute for padded furniture, and facilitates the cleaning and disinfecting of the rooms and their contents. Bedside carpets should be of washable jute linen. The whole floor of every such room must be wiped with a damp cloth daily, to remove the dust, and aired for at least an hour in winter as well as in summer; the rooms must be thoroughly cleansed every week, and disinfected every three months according to the regulations for disinfection in epidemics dated Feb. 7th, 1887."

A Portrait of Virchow.

The famous portrait painter Franz Lenbach of Munich is painting a portrait of Virchow for the Berlin Medical Society. It will be unveiled at a festal meeting of the Society, and presented to the Langenbeck House. There it will hang beside a portrait of Langenbeck in the hall destined for the meetings of the medical societies of Berlin, for congress assemblies, festal ceremonies, &c.

German Death-rates in the week ending March 14th.

Aix-la-Chapelle, 25·4; Altona, 32·6; Barmen, 16·3; Berlin, 21; Bremen, 21·5; Breslau, 24·4; Chemnitz, 32·5; Cologne, 23·4; Dantzic, 27; Dresden, 20·1; Dusseldorf, 25·6; Elberfeld, 21·2; Frankfort, 22·8; Hamburg, 23·8; Hanover, 21; Königsberg, 24; Krefeld, 29·6; Leipsic, 20·9; Magdeburg, 24·1; Munich, 30·9; Nuernberg, 28·6; Stettin, 22·4; Strasburg, 23·7; Stuttgart, 24·2.

Berlin, March 30th.

Obituary.

WILBERFORCE ARNOLD, M.R.C.P.I., M.R.C.S., J.P.

WE have to announce with regret the death of Mr. Arnold, which took place suddenly at his residence, Crescent House, Belfast, on Monday night, March 23rd, at the age of fifty-three years. Ever since September last, when he had a slight paralytic stroke, he has been in poor health, a fact noticed by many of his friends. On Monday night, after seeing a patient, he complained of feeling faint, and Dr. Howard Sinclair and Dr. Lindsay saw him soon afterwards, but he was in a semi-conscious condition, and died from cardiac failure. Mr. Arnold was the son of Mr. John Arnold, a man well known in his time in Belfast, and highly respected. Mr. Arnold, who was a member of the Royal College of Surgeons of England, and of the College of Physicians of Ireland, occupied a good social and professional position in Belfast. He was specially distinguished for his religous and philanthropic work, and it was articles from his pen which led to the establishment of the Presbyterian Orphan Society, which has been a great success in Ulster. Mr. Arnold, who was a justice of the peace for the city of Belfast, leaves a widow, three sons, and five daughters.

Medical News.

EPSOM COLLEGE.—H. Boulton, a pupil at the College, has just gained an open scholarship of £50 for Natural Science at Clare College, Cambridge.

MEDICAL MAGISTRATES, QUEENSLAND.—Mr. M. J. Collins, L.R.C.S. Edin., of Clermont, and Mr. F. H. V. Voss, M.R.C.S., of Rockhampton, have been appointed Justices of the Peace for Queensland.

THE GRESHAM LECTURES.—The subject of Dr. Symes Thompson's lectures, to be delivered on April 7th and three following days, will be "The Prevention of Disease," and will be treated under the headings "The Access of Disease," "Infection and Disinfection," "Diphtheria," and "Contagion."

SOCIETY FOR THE STUDY OF INEBRIETY.—At the annual meeting, to be held on April 7th, in the rooms of the Medical Society of London, 11, Chandos-street, Cavendish-square, W., the President, Norman Kerr, M.D., F.L.S., will take for the subject of his annual address, "Recent Criminal and Civil Trials, with Inebriate Complications; and the Urgent Need for a Reformed Jurisprudence."

THE HOME FOR LOST DOGS, BATTERSEA.—The thirtieth annual report, just issued, states that, during the year 1890, 21,593 dogs had been received into the Home, showing a decrease of 2530, compared with the returns of the previous year, which were augmented by seizures under the muzzling order. But these figures exceed by 4500 those issued prior to that order. The committee report an almost entire absence of rabies during the past year. Reference is made to the valuable services of Dr. Richardson, who had generously presented to the Home two lethal chambers, in which useless dogs met a painless death.

THE PUBLIC HEALTH MEDICAL SOCIETY.—A meeting of the council of this Society was held on the 24th ult., at its offices, 101, Great Russell-street, Bedford-square, Professor W. R. Smith, M.D., vice-president, in the chair. Among the business transacted was the consideration of various Bills at present before Parliament, and it was unanimously resolved that steps should at once be taken to have an amendment placed on the paper in connexion with the Public Health Law Amendment (London) Bill, with the view of making it compulsory that medical officers of health in the metropolis should not engage in general practice.

QUEEN'S HOSPITAL, BIRMINGHAM.—The report (the fiftieth, and the jubilee year of the institution) is highly satisfactory, both in respect to finance and the large additional good work accomplished during the past year. There was a balance of income over expenditure of £2491 16*s.* 8*d.*, due chiefly to the exceptional amount received in legacies. The in-patients had increased by twelve per day, the total number for the year was 1948, and 27,756 out-patients were tended. From the Hospital Saturday collection £1524 11*s.* 8*d* was allotted to the institution (a very substantial addition on the previous year), and £4435 9*s.* was received from the Hospital Sunday Fund. As soon as the finances of the hospital justify it, the extra space available by the recent enlargement of the wards will be utilised to meet the present inadequate accommodation for out-patients.

SCHOOLS OF SURGERY, ROYAL COLLEGE OF SURGEONS IN IRELAND.—The following is the Anatomical Prize List for the winter session 1890–91:—*Descriptive Anatomy:* Junior—First-class certificates, Messrs. Green (1st Prize and Medal), Meeke (2nd Prize), E. C. Hayes, G. Davidge, J. W. Griffin, C. Black, Keating, Marie Goodwin, Odlum. Senior—Messrs. Sweeny (1st Prize and Medal), O'Donnell (2nd Prize), Taylor, Trewhella, F. Matthews, W. Martin. *Practical Anatomy:* Junior—Messrs. Greene (1st Prize and Medal), Meeke (2nd Prize), E. Hayes, Culligan, L'Estrange, Griffin, Keating, Davidge. Senior—Messrs. Molyneux (1st Prize and Medal), Sweeny (2nd Prize), Beban, E. Tennant, McCann, Grogan, Taylor, Trewhella, Martin, Matthews, Rothwell. Third year—Messrs. Black (1st Prize and Medal), Elsner (2nd Prize), Oliver, Warren, Anderson, J. Griffin, Maughan, Clifford, Good, and W. F. McCann.

THE SANITARY CONDITION OF ST. BARTHOLOMEW'S HOSPITAL.—A petition having been presented to the Commissioners of Sewers complaining of the sanitary condition of this hospital, it has been referred by that body to the Sanitary Committee for further investigation.

NORTH-EASTERN HOSPITAL FOR CHILDREN.—The dinner in aid of the funds of the hospital, at which the Duke of Connaught has consented to preside, will be held in the Royal Venetian Chamber, Holborn Restaurant, on May 15th.

THE NEW INFIRMARY, DERBY.—An official intimation has been received by the Mayor of Derby that Her Majesty the Queen will lay the foundation stone of the new infirmary on the 21st prox. The building is estimated to cost £74,000. The present infirmary, owing to its sanitary defects, has been condemned.

CONGRESS OF HYGIENE.—The Council of the Society of Arts, acting under the provisions of the Benjamin Shaw Trust, have offered two gold medals, or two prizes of £20 each, to the Executive Committee of the Congress of Hygiene and Demography, for any inventions or discoveries of date subsequent to 1885, exhibited at or submitted to the Congress and coming within the terms of the trust. Under the conditions laid down by the donor, these prizes are to be offered for new methods of obviating or diminishing risks incidental to industrial occupations.

NEW INFIRMARY AT WEST DERBY.—The ceremony took place last week of laying the foundation stone of the new infirmary which the West Derby Union Board has decided to erect in the Mill-road. The main building on the north side of Mill-road will comprise the administrative block, in addition to the old lower hospital, which it is proposed to leave standing. The several floors of the blocks will contain a large ward capable of accommodating thirty-six patients, duty room, and day room. The whole scheme will be carried out on the latest approved plans of hospital construction.

UNIVERSITY COLLEGE HOSPITAL.—This institution maintains its efficient administration. The report for 1890 states that the year commenced with debts amounting to £14,147, and, unless the charity received additional support, the committee look forward to grave responsibility. The yearly reliable income was about £6000, while the expenditure approached £20,000. In 1890, 2773 in-patients were admitted. The out-patients numbered 39,478, and the attendances of the latter, including first attendances, 146,062. The hospital rebuilding fund had remained almost stationary. At present £12,000 was in hand, but £30,000 was required.

BRISTOL INFIRMARY.—The 155th annual report shows that the finance of the institution is still unsatisfactory. A heavy debt remains due to the treasurer. As regards the number of in-patients during the past year there was nothing that called for special notice; but there had been a remarkable addition in the total of out-patients, which exceeded the previous year by no less than 4200 (about 16 per cent.), making the total of out-patients attended 30,567. Camden House, which was purchased four years ago, is now in full operation, and affords accommodation for fifty nurses; in connexion with which a Nurses' Institute is being gradually added to from fully qualified nurses who have received their training in the house.

STOCKPORT INFIRMARY.—The annual meeting of the trustees was held last week. The report for the year 1890, which was read, stated that next year would witness the close of a hundred years since the dispensary was inaugurated in a humble cottage by Dr. Briscoll. A Samaritan Fund had been established to aid poor persons by sending them to convalescent hospitals. The late Mr. Allatt Marsland had bequeathed £500, free of legacy duty, to this fund. A framed portrait of Dr. Killer, one of the founders, had been presented to the infirmary. The receipts for the year, exclusive of legacies, had enabled the committee to increase the assets by £3516, these now standing at £41,000. The number of cases treated was 5156, of which 1339 were accidents. There had been 650 in-patients.

BEQUESTS AND DONATIONS.—Mrs. Anne Browne of Monkstown has left to the Royal Hospital for Incurables £50, Adelaide Hospital £50, Meath Hospital £50, and Cripples' Home, Bray, £50.—Lord Iveagh and Mr. Rathbone have given a donation of £100 each to St. Patrick's Nurses' Home.

YELLOW FEVER ON A BRITISH STEAMER.—An Exchange telegram reports that the Royal Mail steamer *Trent* has been detained in quarantine at Southampton, owing to four fatal cases of yellow fever on the homeward voyage from the River Plate. A tug was to have taken off the mails and specie on Thursday, but the order was countermanded.

FEVER IN BIRKENHEAD.—Another outbreak of fever is reported in Birkenhead, beginning in the Borough Hospital, three of the inmates of which were struck down simultaneously, and the medical staff deemed their removal to the fever hospital to be advisable. The fever has not been officially declared to be typhus, and every precautionary measure is adopted in the hospital.

FOOTBALL CASUALTIES.—In the Alliance match with Bootle on the 23rd ult., at Bootle, three players sustained severe injuries from kicks. Mr. Jabez Ratcliffe, whilst playing football last week, at Hathern, fractured his right hand. On Monday, a youth, belonging to Corbridge, whilst playing a match between the Acomb Archers and the Corbridge Juniors, broke one of his legs below the knee, there being a compound fracture. On Tuesday evening, a youth, aged seventeen, of Black Heath, was admitted into the West Bromwich District Hospital, suffering from a fractured thigh whilst playing football.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC.—The board of management of this hospital announce that the Right Hon. the Earl of Derby, K.G., will preside at the Biennial Festival on Thursday, April 23rd, at the Whitehall Rooms, Hôtel Métropole. The special objects of the festival are: to raise a sum of £2500 to cover deficit on general purposes account and to prevent the closing of wards; to raise a sum of £500 to complete the equipment of the new surgical wing; and to increase the annual subscription list, which, though actually 10 per cent. more, is, proportionately to the expenditure, 40 per cent. less than before the rebuilding.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

BAYNES, JAMES, has been appointed Analyst for the City and Borough of Peterborough.

BLUCKE, H. F. S., L.R.C.P. Lond., M.R.C.S., has been appointed House Surgeon to the Teignmouth, Dawlish, and Newton Infirmary, Dispensary, and Convalescent Home.

BROWN, W. H., M.R.C.S., has been appointed Public Vaccinator for Colac, Victoria, Australia.

BROWN, W. S., M.R.C.S., has been appointed Medical Officer to the Paramatta Friendly Societies' Medical Institute, New South Wales.

BRYCE, ALEX., M.B., C.M. Glasg., has been appointed Medical Officer for the Parish of Killin, Perthshire.

CAVERHILL, T. F. S., M.B., F.R.C.P. Edin., has been appointed Medical Officer for the County of Haddingtonshire.

COBB, JOHN FRED., M.R.C.S., has been appointed Public Vaccinator for East Collingwood, Victoria, Australia, vice Macgibbon.

CONNOR, F. G., M.B., C.M. Edin., has been appointed Medical Officer to the Lismore Hospital, Lismore, New South Wales.

DEANE, JOHN E. J., L.R.C.P. Irel., L.F.P.S. Glasg., has been appointed Public Vaccinator for Rutherglen, Victoria, Australia, vice Lang, resigned.

DODSWORTH, F. C., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health for the Chiswick Urban Sanitary District of the Brentford Union, vice Moore, resigned.

FISHER, JOHN A., L.R.C.P. Edin., L.F.P.S. Glasg., has been reappointed Medical Officer of Health for Garston, Lancashire.

FISHER, THEODORE, M.D. Lond., M.R.C.S., has been appointed Assistant Medical Officer to the Infirmary of the St. Saviour's Union, vice Muspratt, resigned.

FITZGERALD, J., M.B., C.M. Edin., has been appointed Public Vaccinator for the District of Kaitangata, New Zealand.

FORBES, ARMITAGE, L.R.C.P. Edin., L.R.C.S. Irel., has been appointed Government Medical Officer and Vaccinator for the District of Fernmount, New South Wales.

HODGSON, H., L.R.C.P. Lond., M.R.C.S., has been appointed Resident Obstetric Surgeon, Guy's Hospital.

HUNTER, ROBT. R., M.B., C.M. Glasg., M.R.C.S., has been appointed Government Medical Officer, Mount Morgan, Queensland.

JOHNSTON, JOHN, M.B., C.M. Glasg., has been appointed Medical Officer for the Town of Williamstown, Victoria, Australia, vice Figg, resigned.

KAY, JAS. M. M., M.B., C.M. Edin., has been appointed Medical Officer to the Workmen of Messrs. Lucas and Aird, Railway Contractors, Crianlarich, Perthshire, vice Hodges, resigned.

LEE, TIMOTHY W., M.R.C.S., has been appointed Government Medical Officer and Vaccinator for the District of Wollongong, also Visiting Surgeon to the Wollongong Gaol, New South Wales.

LESLIE, LOUIS G., L.R.C.P., L.R.C.S. Edin., has been appointed Medical Officer for the Rutherglen Borough, Victoria, South Australia.

LEWIS, PERCY G., M.D., has been appointed Honorary Medical Officer to the Victoria Hospital, Folkestone, and Honorary Assistant Medical Officer to the St. Andrew's Convalescent Hospital, Folkestone.

LEWIS, WM. M., M.D., M.Ch., L.M. R.C.P. Irel., has been appointed Public Vaccinator for Donald, Victoria, Australia, vice Fleming.

MACKINTOSH, A., M.D., L.F.P.S. Glasg., has been reappointed Medical Officer of Health for the Clay Lane Urban District.

MADIN, WM. T., L.D.S. R.C.S., has been appointed Dental Tutor to Queen's College, Birmingham.

MCGEE, WILLIAM, L.R.C.S., L.K.Q.C.P. Irel., has been appointed Medical Officer for Avonshire, Victoria, South Australia.

MITCHELL, JOHN, M.D., L.F.P.S. Glasg., has been reappointed Medical Officer of Health for the Barnard Castle Urban and Rural Districts of the Teesdale Union.

MORROW, ROBERT, M.D., B.Ch. Dub., has been appointed Medical Officer for the Shire of Woorayl, Victoria, Australia, vice Montgomery.

MORTON, SELBY M., M.R.C.S., has been appointed Government Medical Officer and Vaccinator for the District of Goulburn, also Visiting Surgeon to the Goulburn Gaol, New South Wales.

NASMYTH, T. G., M.D. Edin., D.P.H. Camb., has been appointed Medical Officer for the Cupar District, Fifeshire.

PAUL, G. W. F., M.D. Brux., L.R.C.P. Lond., M.R.C.S., has been appointed Government Medical Officer for Sandgate, Queensland.

PERRY, C. E., M.D. Brux., L.R.C.P. Edin., M.R.C.S., has been reappointed Medical Officer of Health for Sandgate.

PHILLIPS, E. E., L.R.C.P. Edin., M.R.C.S., has been appointed Medical Officer of Health for the Southend Local Board.

POPE, H. SHARLAND, B.A., M.B. B.C. Cantab., has been appointed House Physician to the General Lying-in Hospital, York-road, vice H. B. Osburn, resigned.

ROWLEY, CHAS., M.R.C.S., has been appointed Public Vaccinator for the District of Te Awamutu, Auckland, New Zealand.

SIMS, G. S., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the West District of the Derby Union.

SMITH, ALFRED F., L.R.C.P., L.R.C.S. Irel., has been appointed Medical Officer for the Shire of Flinders and Kangereong, Victoria, Australia, vice Theed.

WHITAKER, GEO. HERBERT, M.R.C.S., has been appointed Medical Officer for the Bungay District, Suffolk, vice Johnson, resigned.

WILDING, WALTER F. W., M.R.C.S., L.R.C.P. Lond., and L.M. Coombe, has been appointed Medical Officer of Health to the Hindley Local Board, vice John Aspinall, resigned.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement.

BIRMINGHAM CITY ASYLUM, Rubery-hill, near Bromsgrove.—Clinical Assistant. Board, lodging, and washing will be provided.

BRIDGWATER INFIRMARY.—House Surgeon. Salary £80 per annum, with board and residence.

CANCER HOSPITAL (FREE), Fulham-road, S.W.—Assistant Surgeon.

CHELSEA HOSPITAL FOR WOMEN, Fulham-road, S.W.—Honorary Pathologist.

CITY OF LONDON LUNATIC ASYLUM, Stone, near Dartford, Kent.—Clinical Assistant. Board, lodging, washing, and attendance provided.

DEACONESSES' INSTITUTION AND HOSPITAL, Tottenham, N.—House Surgeon. Salary £90 per annum, with board and residence.

EAST LONDON HOSPITAL FOR CHILDREN, Shadwell, E.—House Physiciancy. Board and lodging provided.

GENERAL HOSPITAL, Birmingham.—Honorary Physician.

GRANTHAM FRIENDLY AND TRADE SOCIETIES' MEDICAL INSTITUTION.—Resident Medical Officer. Salary £150 per annum and midwifery fees, with residence, coals, gas, and rates free. (Apply to Mr. F Hullot, Grantham)

MANCHESTER HOSPITAL FOR CONSUMPTION AND DISEASES OF THE THROAT.—Resident Medical Officer at Bowdon, Cheshire. Salary £60, with board, apartments, and washing.

MESSRS. J. T. RENNIE, SON, & CO., 4, East India-avenue, E.C.—Surgeon for Steamer for three months' voyage to South Africa and back.

OXFORD EYE HOSPITAL.—House Surgeon. Board, lodging, and honorarium of £50 at expiration of a year.

SALFORD UNION.—Assistant Medical Officer for the Union Infirmary, Hope, near Eccles. Salary £130 per annum, with furnished apartments in the Infirmary. (Apply to the Clerk to the Guardians, Union Offices, Eccles-new-road, Salford.)

SUSSEX COUNTY HOSPITAL, Brighton.—House Surgeon. Salary £120, rising to £140 per annum, at the discretion of the Committee of Management, with residence and board in the Hospital, with his washing.

SWANSEA HOSPITAL.—Resident Medical Officer. Salary £100 per annum, with board, furnished apartments, coals, gas, laundress, and attendance.

WEST BROMWICH DISTRICT HOSPITAL.—Assistant House Surgeon for six months. Board, lodging, and washing in the Hospital.

WEST RIDING LUNATIC ASYLUM, Wakefield.—Pathologist and Assistant Medical Officer. Salary £100, advancing £10 annually to £150, with board, furnished apartments, &c., and an additional £50 as Pathologist.

Births, Marriages, and Deaths.

BIRTHS.

ALDOUS.—On March 27th, at Charlton House, Plymouth, Devonshire, the wife of George Frederick Aldous, Surgeon, of a daughter.

DAUNT.—On March 24th, at Exmouth-street, W.C., the wife of Francis Eldon Horsford Daunt, L.R.C.P. &c., of a son.

DE MÉRIC.—On March 25th, at Kingswood, Rodwell, Weymouth, the wife of Fleet Surgeon E. V. De Méric, R.N. (retired), of a son.

DOWNMAN.—On March 16th, at Arunhurst, Burnham-on-Crouch, the wife of Charles F. Downman, L.R.C.P. Lond., M.R.C.S. Eng., of a son.

EDWARDS.—On March 30th, at Wimpole-street, Cavendish-square, W., the wife of F. Swinford Edwards, F.R.C.S., of a daughter.

FOLEY.—On March 26th, at Marmora-road, Honour-road, S.E., the wife of C. N. Foley, L.R.C.P. Lond., M.R.C.S., of a son.

MACKENZIE.—On March 18th, at North House, Lockwood, Huddersfield, the wife of F. L. Mackenzie, M.B., of a son.

MATTHEWS.—On March 20th, at St. Owen-street, Hereford, the wife of S. R. Matthews, M.D., of a daughter.

MINNS.—On March 23rd, at 10, Whitehart-street, Thetford, the wife of Allan Minns, L.R.C.P. Lond., of a son.

SEQUEIRA.—On March 20th, at Ingleside, Fairlop-road, Leytonstone, the wife of Henry J. Sequeira, M.R.C.S., L.S.A., of a son.

WOODS.—On March 22nd, at Greenshill, Timsbury, Bath, the wife of Frank Woods, L.R.C.P. Lond., M.R.C.S., of a son.

MARRIAGE.

HUNT—CUTLER.—On March 25th, at St. Luke's, Chelsea, James Sidney Hunt, M.R.C.S., L.R.C.P., of Hughenden, Queensland, to Lilian Mona, fourth daughter of W. H. Cutler, of Marnhull, Dorset, and Duncliffe, Upper Norwood.

DEATHS.

BOLTON.—Suddenly, from convulsions, Flora Beatrice, aged 2½ years. The dearly loved and loving child of Teresina and A. Irwin Bolton, A.B., M.B., T.C.D., L.R.C.S.I. Kustendjie, Roumania.

HALL.—On March 24th, at The Lodge, Avenue, Southampton, William Henry Hall, M.D., aged 72.

LEIGH.—On March 30th, at Leamington, Edwd. P. Leigh, M.R.C.S.

SALTER.—On March 25th, at 18, College-road, Leeds, Francis Joseph Salter (Frank), L.R.C.P. and L.R.C.S., second son of the late Joseph Salter, of Lyddon-terrace—"Until dawn." No cards.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

METROPOLITAN ASYLUMS BOARD.

Return of Patients remaining in the several Fever Hospitals of the Board at midnight on March 31st, 1891.

Hospital.	Beds occupied.						Total accommodation.
	Scarlet fever.	Diphtheria.	Typhus fever.	Enteric fever.	Other diseases.	Total.	
Eastern Hospital	222	51	..	46	2	321	442
North-Western Hospital	149	39	..	12	3	203	443
Western ,,	149	19	..	12	1	181	224
South-Western ,,	142	22	..	14	..	178	340
South-Eastern ,,	181	13	..	20	2*	216	462
Northern ,,	177	22	..	8	..	207	480
Totals	1020	166	..	112	8	1306	2391

SMALL-POX.—South-Eastern Hospital, 3; *Atlas* hospital ship, 4. Total, 7.

* Infant and mother.

Medical Diary for the ensuing Week.

Monday, April 6.

ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations daily at 10 A.M.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1.30 P.M., and each day at the same hour.

CHELSEA HOSPITAL FOR WOMEN.—Operations, 2.30 P.M.; Thursday, 2.30.

HOSPITAL FOR WOMEN, SOHO-SQUARE.—Operations, 2 P.M., and on Thursday at the same hour.

METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.

ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.

CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M., and each day in the week at the same hour.

UNIVERSITY COLLEGE HOSPITAL.—Ear and Throat Department, 9 A.M.; Thursday, 9 A.M.

ROYAL INSTITUTION.—5 P.M. General Monthly Meeting.

ODONTOLOGICAL SOCIETY OF GREAT BRITAIN (40, Leicester-sq., W.C.).—8 P.M. Mr. A. Pearce Gould: Tooth-plate impacted in the Pharynx: Death from Septicæmia. Casual Communications:—Mr. Penfold; Movable Mass of Salivary Calculus tolerated for three years as an Incurable Tumour.—Mr. W. H. Coffin: Jaw and Dentition of the Irish Giant, Cornelius Magrath.—Mr. Stocken: Cases of Absorption of Permanent Teeth.

MEDICAL SOCIETY OF LONDON.—8.30 P.M. Mr. Alban Doran: Fibro-Sarcoma, or Desmoid Growth of the Abdominal Wall.—Mr. Stephen Paget: Three cases of Strangulated Cæcal Herniæ in Infants.—Dr. de Havilland Hall: Chronic Atrophic Rhinitis (Ozæna).

Tuesday, April 7.

KING'S COLLEGE HOSPITAL.—Operations, 2 P.M.; Fridays and Saturdays at the same hour.

GUY'S HOSPITAL.—Operations, 1.30 P.M., and on Friday at same hour. Ophthalmic Operations on Monday at 1.30 and Thursday at 2 P.M.

ST. THOMAS'S HOSPITAL.—Ophthalmic operations, 4 P.M.; Friday, 2 P.M.

ST. MARK'S HOSPITAL.—Operations, 2 P.M.

CANCER HOSPITAL, BROMPTON.—Operations, 2 P.M.; Saturday, 2 P.M.

WESTMINSTER HOSPITAL.—Operations, 2 P.M.

WEST LONDON HOSPITAL.—Operations, 2.30 P.M.

ST. MARY'S HOSPITAL.—Operations, 1.30 P.M. Consultations, Monday 2.30 P.M. Skin Department, Monday and Thursday, 9.30 A.M. Throat Department, Tuesdays and Fridays, 1.30 P.M. Electro-therapeutics, same day, 2 P.M.

ROYAL INSTITUTION.—3 P.M. Mr. J. Scott Keltie: The Geography of Africa.

PATHOLOGICAL SOCIETY OF LONDON.—8.30 P.M. Dr. Aldren Turner and Dr. Campbell: Heterotopia of Spinal Cord.—Dr. H. Tooth: Heterotopia of Spinal Cord.—Dr. Newton Pitt: Chronic Intestinal Stricture Secondary to Strangulation in a Hernial Sac.—Mr. W. B. Robinson: Columnar-celled Carcinoma of Jaw.—Mr. H. H. Clutton: Osteitis Deformans of Tibia.—Mr. S. G. Shattock: Thickening of Skull in Rickets.—Mr. E. C. Stabb: Tuberculosis of Tendon Sheath.—Dr. A. F. Voelcker: Tuberculosis of Lymphatic Glands invading Lung by Continuity.—Mr. S. Paget: Carcinoma of Scalp. Card Specimens:—Dr. Hale White: Hodgkin's Disease with Waxy Kidney.—Dr. Newton Pitt: Pigmented Colon from a case of Lead Poisoning.

Wednesday, April 8.

NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 10 A.M.

MIDDLESEX HOSPITAL.—Operations, 1 P.M. Operations by the Obstetric Physicians on Thursdays at 2 P.M.

ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1.30 P.M.; Saturday, same hour. Ophthalmic Operations, Tuesday and Thursday, 1.30 P.M. Surgical Consultations, Thursday, 1.30 P.M.

CHARING-CROSS HOSPITAL.—Operations, 3 P.M., and on Thursday and Friday at the same hour.

ST. THOMAS'S HOSPITAL.—Operations, 1.30 P.M.; Saturday, same hour.

LONDON HOSPITAL.—Operations, 2 P.M. Thursday & Saturday, same hour.

ST. PETER'S HOSPITAL, COVENT-GARDEN.—Operations, 2 P.M.

SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations, 2.30 P.M.

GREAT NORTHERN CENTRAL HOSPITAL.—Operations, 2 P.M.

UNIVERSITY COLLEGE HOSPITAL.—Operations, 1.30 P.M.; Skin Department, 1.45 P.M.; Saturday, 9.15 A.M.

ROYAL FREE HOSPITAL.—Operations, 2 P.M., and on Saturday.

CHILDREN'S HOSPITAL, GREAT ORMOND-STREET.—Operations, 9.30 A.M.; Surgical Visits on Wednesday and Saturday at 9.15 A.M.

HUNTERIAN SOCIETY.—8 P.M. Dr. F. J. Smith: (1) A case of Fibrous Growths on the Hands: (2) A case of Congenital Heart Disease.—Mr. F. R. Humphreys: Two cases of Pneumonia (migrating), with complications.—Dr. A. T. Davies: (1) A case of Paralysis Agitans; (2) A case of Graves' Disease.

Thursday, April 9.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M. Surgical Consultations, Wednesday, 1.30 P.M. Ophthalmic Operations, Friday, 1.30 P.M.

UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.; Ear and Throat Department, 9 A.M.

ROYAL INSTITUTION.—3 P.M. Professor Dewar: Recent Spectroscopic Investigations.

BRITISH GYNÆCOLOGICAL SOCIETY.—8.30 P.M. Adjourned Discussion on Dr. Bell's paper ("The Treatment of Chronic Disease of the Uterine Adnexa"). Mr. Mayo Robson: Observations on the Menstrual Flow in two cases of Biliary Fistula.

Friday, April 10.

ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—**Operations, 2 P.M.**

CLINICAL SOCIETY OF LONDON.—8 P.M. Mr. A. T. Norton: A case of Popliteal Aneurysm in a youth of seventeen.—Mr. G. R. Turner: A case of Cancellous Suppression of Urine with Double Pyonephrosis; Nephrolithotomy on both sides at one sitting.—Mr. W. H. A. Jacobson: Eight cases of Nephrolithotomy, with their lessons.—Mr. Bilton Pollard: A case of Nephrolithotomy in a boy aged ten years.

ROYAL INSTITUTION.—9 P.M. Sir William Thomson: Electric and Magnetic Screening.

Saturday, April 11.

MIDDLESEX HOSPITAL.—**Operations, 2 P.M.**

UNIVERSITY COLLEGE HOSPITAL.—**Operations, 2 P.M.; and Skin Department, 9.15 A.M.**

ROYAL INSTITUTION.—3 P.M. Prof. Silvanus P. Thompson: The Dynamo.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, April 2nd, 1891.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radiation in Vacuo.	Maximum Temp. Shade.	Min. Temp	Rainfall.	Remarks at 8.30 A.M.
Mar. 27	29·82	W.	40	36	84	47	35	..	Cloudy
,, 28	29·70	N.	42	39	85	54	36	·04	Cloudy
,, 29	29·71	W.	46	43	89	55	39	..	Cloudy
,, 30	29·79	N.W.	39	33	93	48	33	..	Cloudy
,, 31	30·02	N.W.	39	36	88	48	33	..	Cloudy
Apr. 1	29·95	S.W.	37	34	80	50	34	..	Overcast
,, 2	29·80	S.E.	43	39	66	48	37	..	Overcast

Notes, Short Comments, & Answers to Correspondents.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

All communications relating to the editorial business of the journal must be addressed "To the Editors."

Lectures, original articles, and reports should be written on one side only of the paper.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *to be addressed "To the Publisher."*

We cannot undertake to return MSS. not used.

"RUDE" HEALTH.

SPEECH, as the author of the "New Cratylus" demonstrated, has its pathology as well as the human subject, and there is literally no end to the "morbid developments" taken on by words in their passage "per ora virûm." An apt illustration is afforded in the familiar expression "rude" health—an expression which will not stand philological examination for a moment. *Crude* health is what is meant, as can be shown by its use in Latin as late as the middle of the sixteenth century:—

> "At me fovebis patriâ indulgentiâ
> Crudo vigentem robore."—*Buchanan, Psalm xcii.*

Sigma.—The form or schedule which has to be filled up for the removal of insane persons in Scotland to asylums consists of (1) a petition to the sheriff to grant an order for the reception of the patient, this being usually signed by a relative of the patient; (2) a statement containing particulars as to the name, age, &c., of the patient, this being signed by the person applying to the sheriff; (3) certificates by two medical men; and (4) the order granted by the sheriff for the transmission and reception of the lunatic.

Mr. C. A. Lumley (Birmingham).—The block to accompany the description is being prepared.

Dr. Roberson Day will find the information in our last issue.

Dr. James Armstrong's letter shall appear in our next number.

L.R.C.S.I.—Yes.

PRACTICE IN THE ORANGE FREE STATE.

A. B. W.—We referred our correspondent's query to Dr. Blyth, the representative of the Orange Free State in this country, and have received from him the following reply:—"A medical diploma is required in the Orange Free State, and most of the men practising there are very able Germans. I do not think any British degree would be otherwise than acceptable to the Government. It is distinctly necessary that the gentleman practising should receive the recognition of the State. The general feeling is, however, very conservative towards 'foreigners'; but there is no reason whatever to doubt that if a man went there properly accredited he would receive every attention and consideration at the hands of the Government."

Dr. Ainley.—We know of no recent work specially devoted to climate in relation to the etiology of disease—a subject dealt with by Mr. A. Haviland, in his "Climate, Weather, and Disease," 1855. Much information may be gleaned in Hirsch's "Historical and Geographical Pathology" (New Sydenham Society's Transactions), and in the works on "Les Climats des Montagnes" (3rd ed., 1873) and "Traité de Climatologie Médicale" (1877) by Prof. Lombard.

J. W. P.—1. The first question is answered on p. 686 of our impression of March 21st.—2. This question is also practically answered on p. 677.—3. Crookshank's Manual of Bacteriology might be consulted.

Mr. F. W. Kirkham.—The only remedy of our correspondent's patient is in the county court.

Nolens Volens has not enclosed his card.

DISPENSING BY MEDICAL MEN.

To the Editors of THE LANCET.

SIRS,—The subject of dispensing by medical men has occupied the attention of the profession for many years, but the *pros* and *cons* seem so numerous that the matter is likely to remain *in statu quo* for some time. Having had a large general country practice for several years, with a large amount of dispensing, and having now a prescribing practice in a town, I feel that I am in a position to see the various disadvantages of both a dispensing and a prescribing practice. There is no doubt that it would add to the dignity of the profession if dispensing were given up entirely. It would, however, take some time to accomplish, and necessitate a great change in the form of contracts for clubs and unions in country districts. Druggists have told me that they would not dispense for club and parish patients for a less sum than medical men usually get for both medical attendance and medicines combined. The salary of a parish doctor in the country usually pays him at the rate of 1½*d.* for each lot of medicine supplied, and this leaves out of the calculation visits and advice, for which there would be *nil*. I worked this carefully out some years ago, and, curiously enough, another surgeon arrived at the same figure, and quite independently of me. Where there is a large dispensing practice a dispenser ought to be kept; otherwise what your correspondent says is likely to happen—viz., slipshod dispensing and hurrying over cases to get home again to dispense. A patient should never be kept waiting for the medicine if no dispenser is kept, but the prescription forwarded by the patient to the chemist, under cover if preferred, and marked "To my account." The chemist would then retain the prescription. There are several patients who cannot pay a respectable fee to the doctor and then pay the druggist also; and, moreover, prescriptions are dangerous weapons in the hands of the ignorant. I once gave a prescription of small doses of aconite and salicylate of soda, and told the patient to call and see me in three days. It appears, however, he did not want to pay me a second fee, so went on with his aconite mixture for a month! At the expiration of that time I accidentally met him, and he complained of feeling very weak. Again, do patients always get what is prescribed for them? I fancy not. Who is to say when German salicylate is substituted for that which is physiologically pure, or cinchonidine for quinine, without subjecting the mixture to analysis? I do not ask this question without full justification; and although I prescribe only, I am sure my patients would fare better if I dispensed for them as well. The great abuse of sedatives has been almost entirely caused by prescriptions being given to patients and handed about to their friends; and yet sedatives must be prescribed in the form of night mixtures now and again. The abuse of many other drugs occurs in the same way. In a prescribing practice consulting fees at the house have to be higher, because the patients do not come so often. And the same applies to visits at the house, for it is not uncommon for patients, when they get the prescription, to quietly tell you that "they will let you know if they want you to call again." Having got the prescription they think that is all they require until fresh symptoms arise. This, of course, only applies to the small patients, and not the better class. For these reasons dispensing practices are more readily transferable, as the prescriptions are held by the doctor in the same way as documents are held by the lawyer; and the patients are consequently more easily retained by the purchaser of such a practice.

Now, how is the proposed alteration to be brought about? I should think the first step would be for all club and parish doctors to refuse to dispense for such patients, and then gradually for the dispensing for private patients to be also refused.—I am, Sirs, yours truly,

Bristol, April 1st, 1891. PRESCRIBER.

A NURSE'S CHART.

MESSRS. H. GILBERT AND SONS of St. Andrews-street, Holborn-circus, have published a chart designed by Nurse Marion Pincoffs, drawn up so as to be made available for written directions to the nurse for the proper treatment of any particular patient. Its intention is to ensure accuracy in following medical instructions—a clinical slate ruled in the form of the usual clinical chart, and containing columns for directions for the treatment of the patient, and for recording the observations of the nurse or medical man at any particular time. It cannot fail to be found useful. A continued record from day to day may be made at the end of each day on the back of the slate.

Equity (Brighton).—Our correspondent claims a fee from the London School Board for information as to the health of one of the teachers, granted in answer to a request from the medical officer of the Board. We doubt whether he could enforce such a claim. The information was asked for as a kind of favour by the medical officer of the Board, and presumably in the interest of our correspondent's patient, who might be supposed liable. The point is a doubtful one, and should be cleared up.

Dr. Hime (Bradford).—Very soon.

MEDICAL OFFICERS OF HEALTH AND OTHER PRACTITIONERS' PRIVATE PATIENTS.

To the Editors of THE LANCET.

SIRS,—I have been in communication with the Local Government Board with reference to the duties of medical officers of health, especially as relates to their behaviour toward medical men certifying to them under the Infectious Diseases Notification Act, 1889. In reply I received the following:—

"I am directed by the Local Government Board to advert to your letter of the 7th inst., and to state that Article 18(6) of the Board's order of the 11th of March, 1880, which prescribes the duties of the medical officer of health, is as follows: 'On receiving information of the outbreak of any contagious, infectious, or epidemic disease of a dangerous character within the district, he shall visit the spot without delay and inquire into the causes and circumstances of such outbreak; and, in case he is not satisfied that all due precautions are being taken, he shall advise the persons competent to act as to the measures which may appear to him to be required to prevent the extension of the disease, and, so far as he may be lawfully authorised, assist in the execution of the same.' As between sanitary officers and medical attendants, the Board leave the interpretation of their regulations to be determined by the circumstances of the particular case, and by the customs that usually govern the relations of medical practitioners to each other."

As the interpretation of these regulations is what I asked for—especially as to whether the medical officer of health was justified in seeing without the permission, or asking it even, of the medical man in attendance,—I pressed for a further and more definite answer; and in reply to my second letter I am informed that the Local Government Board have nothing further to add to their previous letter. Consequently one is forced to the conclusion that they make rules and regulations of which they do not know the interpretation. It is wonderfully clever to ask a riddle and then calmly say, when asked for the answer, "We do not know the answer. You must find that out for yourselves. We only have to ask the riddle; and you—well—you can each of you have your own answer to it."

I, like your correspondent, "N. E. W.," had a case of typhoid fever. The medical officer of health saw it, and reported it to his board as "a questionable case" of typhoid. On another occasion he saw a typhoid patient of mine which he denied being typhoid; but, *mirabile dictu*, some five or six weeks after, another member of the family falling with it, he said it was "caught" from the first case. Well, if medical officers of health are allowed to run riot amongst the patients of other medical men, can you, Sirs, wonder at our protesting against it?

It would be well for some definite and authoritative interpretation of their rules and regulations to be issued by the Local Government Board. Then medical men would understand more clearly than at present their position with respect to medical officers of health.

Personally, no one could be more willing than I to afford every information and opportunity to the medical officer of health; but I do object to having my diagnosis questioned, and this published in every penny weekly paper in the neighbourhood.

I am, Sirs, yours obediently,

March, 1891. DISGUSTED.

HUMAN AND BOVINE SCARLATINA AND DIPHTHERIA.

To the Editors of THE LANCET.

SIRS,—There is one point in Dr. Thorne's Milroy lectures which I think specially calls for attention—viz., that there has been a higher death-rate from diphtheria in urban districts during the last, than in the previous ten years—i.e., it has been higher since milk has been mainly obtained from the country, than when the cows were kept stalled in towns, and really, therefore, placed under less favourable sanitary conditions than at the present time. Dr. Klein has tried to prove that scarlatina and diphtheria frequently originate in the cow, and manifest their existence by surface ulcerations of the udder; but it would appear to me there are, at any rate, two links wanting in the proof. 1. The poison from the udder ulceration has never been shown to produce either diphtheria or scarlatina in man by direct inoculation. The milkers, it is said, have had their fingers affected by it, but no serious constitutional illness has resulted therefrom. 2. These diseases can never be shown to have been transmitted from man to animals. But supposing that these ulcerations of the udder are manifestations of the existence of diphtheria and scarlatina in the cow, a question naturally arises, Do these diseases orginate in man and animals, under any circumstances, from a common cause? From the fact that cows were formerly placed under much less favourable sanitary conditions than at the present time, and that there was then a lower death-rate from diphtheria, I should say it appears unlikely.

It would be a great thing if veterinary surgeons were to inform us how many of the diseases which are communicable from animals to human beings manifest their existence by an entirely different set of symptoms.

I am, Sirs, your obedient servant,

Surbiton, March, 1891. F. P. ATKINSON.

OBSTETRIC ENGAGEMENTS.

To the Editors of THE LANCET.

SIRS,—Can any of your readers inform me whether a general practitioner who professes to be in the actual practice of his profession is justified in accepting midwifery engagements, and when the labour happens to take place in the night coolly informing the messenger requesting his attendance "that he does not go out at night," thus inferring that the patient may get on the best way she can unaided? Quite recently I was called to a case under these somewhat peculiar circumstances, and found that delivery had taken place more than an hour previously. The placenta had not come away, and the uterus was slowly filling with blood, the patient evincing all the symptoms of internal hæmorrhage. One hardly likes to contemplate the result in such a case had the poor woman failed to obtain professional aid.

I am, Sirs, your obedient servant,

March, 1891. A GENERAL PRACTITIONER.

**** Our correspondent describes a style of practitioner that has been met with before in history. Such a practitioner undertaking midwifery engagements and then declining them when they occur at night incurs a very grave responsibility. But for our correspondent's kindness in going to this case a very serious censure might have been the lot of the gentleman who accepted the case but did not discharge his part of the contract.—ED. L.

RE-INFECTION IN CHICKEN-POX.

To the Editors of THE LANCET.

SIRS,—In August, 1890, T. W——, aged three years, had varicella. Three days later D. W——, aged four years, developed the same disease. On March 11th, 1891, their nursery governess had varicella; on the 21st D. W—— again sickened, and had distinct varicella next day; and on the 24th T. W—— also had varicella. A peculiar point in the family history of these children is that their maternal grandmother had rather severe modified small-pox about six years after revaccination.

Unfortunately there is a weak spot in the above narrative. The diagnosis of the first attack, in August last, rested chiefly on the opinion of a trained nurse and the patient's friends, but was in part supported by medical observation at the time. I am inclined to regard it as correct. If it is so, then these children, having had chicken-pox last August, are now (eight months later) going through a second attack of the same disease. Can any practitioner give instances of second attacks of chicken-pox?

I am, Sirs, yours faithfully,

London, S.W. ALFRED LEACH, M.B., M.R.C.P.

CHEAP DOCTORING AND ITS REMEDIES.

To the Editors of THE LANCET.

SIRS,—Your correspondent, "General Practitioner," whose letter appeared in your last issue, is pleased to see that a General Practitioners' Union has been formed. I cannot see that such an association can be of any service. We have a lot of ungentlemanly men in the profession who are willing to give their services for the smallest pittance. In this town an F.R.C.S. Eng., a man in very large practice, has contracted with the police to attend the wives and children of inspectors, sergeants, and constables for the magnificent sum of 1½*d.* per week, wife and child; a whole family, no matter how large, for 2½*d.* per week. It was proposed at a Court of Foresters to increase my remuneration from 4*s.* per member to 6*s.* Member after member suggested that they should pay another penny per week, and have their whole family attended on the same terms as the Metropolitan Police.

I am, Sirs, your obedient servant,

March 31st, 1891. M.D.

CLAIMS ON FRIENDLY SOCIETIES.

To the Editors of THE LANCET.

SIRS,—Can any of your readers inform me if ordinary blindness coming on in a young man, unconnected with any injury or illness, will entitle the patient to take advantage of his club (an ordinary friendly society), and receive weekly payment as a sick member?

I am, Sirs, yours faithfully,

March 26th, 1891. FRIENDLY SOCIETY.

WORCESTER GENERAL INFIRMARY.

IN our notice last week of the annual report of this charity the name of the donor of the cheque for £1000 was given as Mr Wheeley. It should have been Mr. Wheeley Lea, of Parkfield, Hallow.

F.R.C.S.E.—We have no doubt the answer must be in the negative.

Thor.—The usual rate is somewhat under two years' purchase.

"TRACHEAL TUGGING."

To the Editors of THE LANCET.

SIRS,—Will you allow me to correct a typographical error in my article on "The Diagnostic Value of the Physical Sign 'Tracheal Tugging' in Thoracic Aneurysm"? At page 536 it is printed "tracheal tugging is never found when the innominate is *above* the seat of aneurysm." This should read, "tracheal tugging is never found when the innominate is *alone* the seat of aneurysm."

I am, Sirs, yours truly,

Montreal, March 6th, 1891. R. L. MACDONNELL.

COMMUNICATIONS not noticed in our present number will receive attention in our next.

COMMUNICATIONS, LETTERS, &c., have been received from—Dr. Bezly Thorne, London; Mr. L. Humphry, Cambridge; Messrs. Kemp and Co., Bombay; Dr. Elder, Nottingham; Mr. A. Duke; Dr. Hingston Fox, London; Mr. Boobbyer, Nottingham; Dr. Maynard, Brighton; Dr. Ruffer, London; Dr. Weatherley, Bath; Messrs. Richardson and Co., Liverpool; Dr. Wortabet, Beyrout; Dr. Stroud; Messrs. Thorp and Co., London; Dr. Piggott, Teignmouth; Messrs. Roberts and Allinson, Indianopolis; Dr. Bowker, Buty; Messrs. Burgoyne and Co., London; Dr. H. Campbell, London; Messrs. Tozer, Hewitt, and Co., London; Dr. J. Armstrong, Liverpool; Messrs. Mitchell and Co., London; Mr. Nason, Nuneaton; Mr. Kuhn, London; Dr. Rice Morgan, Llangyfelach; Mr. A. C. Waters, London; Messrs. McNab and Co., Leith; Mr. C. E. Paget, Manchester; Messrs. Southall and Co., Birmingham; Mr. J. E. S. Barnett, Brighton; Messrs. Benger and Co., Manchester; Dr. Izod, Esher; Mr. T. Christy; Mr. Usher Somers, Hadfield; Dr. Stalkartt, Kilburn; Messrs. Rowntree and Co., York; Dr. Coleman, Surbiton; Mr. Eminson, Scotter; Rev. Hart Smith, Epsom; Mrs. E. Bond, Starcross; Mr. Colmer; Messrs. E. and S. Livingstone, Edinburgh; Mr. A. P. Watt, London; Messrs. Castle and Lamb, London; Dr. J. R. Day, Hampstead; Messrs. Oliver and Boyd, Edinburgh; Dr. Potter, London; Messrs. Rock, Hawkins, and Co., Hastings; Mr. Little, London; Mr. Barr, Leeds; Dr. Paris, Sierra Leone; Dr. Mossop, Newhaven; Mr. Blount, London; Messrs. Lazard and Co., Paris; Dr. McLaughlan, Edgbaston; Messrs. Street and Co., London; Dr. T. B. Adam, Foochow; Mr. Pope; Messrs. Keith and Co., Edinburgh; Dr. Chandhury, Calcutta; Messrs. Perkins and Co., London; Mr. De St. Dalmas, Leicester; Mr. Scott; Mr. W. M. Jones, Wales; M. Ferreira, Correio; Dr. Moorhead; Mr. Laban, West Bromwich; Dr. Scriven, Duffield; Dr. Perkins, Totnes; Messrs. Davies and Co., London; Mr. Dickson, Staffordshire; Messrs. Blondeau et Cie., London; Mr. Saunders, Manchester; Messrs. Richardson and Co., Leicester; Mr. Coombs, Bridgwater; Messrs. Bates, Hendy, and Co., London; Dr. Bottentuit, Paris; Messrs. Longmans, Green, and Co.; Dr. Morrison, Bengal; Mr. Gravati, London; Messrs. Keene and Ashwell, London; Mr. Macdonnell, Montreal; Dr. Ffrench, Wickham Market; Mr. Rawlings, London; Mr. Eminson, Lincoln; Mr. Rust, Kidderminster; Lieut.-Gen. Bourchier, Brighton; Dr. Hadden, Horncastle; Mr. Birchall, Liverpool; Dr. Griffiths, Clifton; Dr. Atkinson, Surbiton; Mr. Brownlow, Bolton; Dr. Skrimshire, Norfolk; Mr. R. Lloyd, London; Mr. Tomlinson, Maldon; Dr. F. George; Mr. H. W. Just, London; Mr. Freer, Llandudno; Mr. Thomas, Liverpool; Yorkshire College, Leeds; Eblana; Equity; L.R.C.S.I.; D. D.; Norfolk and Norwich Hospital; Stocker, London; H. M. S., London; Lady Superintendent, Leicester; Hoyreed, Gibraltar; Secretary, Swansea Hospital; Medicus, Liverpool; Secretary, Great Tower-street Tea Co., London; Deaconesses' Institution, Tottenham; West Riding Asylum, Wakefield; Smilax, London; J. B., London; St. Andrew's Hospital, Northampton; L.R.C.P., London; Maltine Manufacturing Co., London; London, London; Beaureper; A. W. B.; Cheltenham General Hospital.

LETTERS, *each with enclosure*, are also acknowledged from—Dr. Gowers, London; Mr. Tully, Hastings; Dr. Ball, London; Messrs. Reynolds and Branson, Leeds; Mr. Graham, Lockerbie; Messrs. Hooper and Co., London; Dr. Downman, Burnham-on-Crouch; Messrs. Rocke and Co., London; Mr. Cochrane, Wigtownshire; Dr. Bourke, Earl's Court; Mr. Minns, Thetford; Mrs. Bull, London; Mr. Tyte, Minchinhampton; Mr. Thin, Edinburgh; Mr. Chubb, Torpoint; Mr. Crow, Canterbury; Mr. Edwards, Birmingham; Mr. Plummer, Newcastle-on-Tyne; Mr. Cornish, Manchester; Dr. Vernon, Yeovil; Mr. Thomas, Hull; Mr. Thomas, Bridgend; Mr. Stenhouse, Glasgow; Dr. Diver, London; Mr. Corbett, Birkenhead; Mr. Hadden, Horncastle; Mr. J. Heywood, Manchester; Mr. Hornibrook, London; Mr. Forjett, Lincolnshire; Mr. Gates, London; Mr. Roworth, Grays; Mr. O'Meara, Loughboro'; Mr. Graham, Dumfriesshire; Mrs. Moore, Hayward's Heath; Mr. Young, Brighton; Mr. Vine, London; Messrs. Robertson and Scott, Edinburgh; Dr. Bingham, Alfreton; Messrs. C. Green and Co., London; Mr. Arkle; Mr. Deane, Ellesmere; Mr. Owen, North Wales; Mr. Barker, South Hampstead; Mr. Salter, Leeds; Mr. Hick, New Romney; Mr. Ingle, King's Lynn; Dr. Mackenzie, Huddersfield; Oxford Eye Hospital; Medicus, Manchester; Price's Candle Co., London; L.R.C.P., Southgate; Owner, Lancashire; Fleming Memorial Hospital, Newcastle-on-Tyne; Medicus, Manchester; The Coppice, Nottingham; Winchester, London; Pulsometer Engineering Co., London; Hydro, London; Studens, London; Secretary, Rochdale Infirmary; L.R.C.S., London; E. B., London; Lex, London; Union Assurance Co., London; Dexter, London; Genuine, London; Lady Superintendent, Ryde; Goldthread, London; C. J., London; Fidelis, London; Dispatch, London; Beta, London; A. B., London; Sultan, Hampstead; W. S. W., Sheffield; G. X. T., London; Locum, Newport; M.B., Loughborough; Yorkshire, London; Severn; Assistant, London; Cantab., London; A. B. C., Leeds; G. H. G., London; S. J., London; M. A. R., London; W. A. K., Hackney; J. A. B.; X. Y. Z., Wrexham; A. B. C., London; Alpha, Leeds; R. N., London; M., Birmingham; Epsilon, London; M. M., London; Marischal, London; A., Tredegar.

NEWSPAPERS.—*Carlisle Patriot, Newcastle Guardian, Surrey Gazette, Essex Standard, Rugby Advertiser, Stroud News, Poole Herald, United Service Gazette, Hackney Gazette, Cornish Telegraph, Scotsman, Bournemouth Observer, Louth Times, Bolton Weekly Journal, Hertfordshire Mercury, Weekly Free Press and Aberdeen Herald, Local Government Chronicle, Western Gazette, Windsor and Eton Express, Malvern News, Stamford Guardian, Preston Herald, Liverpool Daily Post, Mining Journal, Insurance Record, Rochdale Times, Suffolk Chronicle, Leeds Mercury, Sidmouth Observer, Wilts Standard, Reading Mercury, Law Journal, Surrey Advertiser, Essex Times, Dudley Herald, Melbourne Argus, Boston Independent, Yorkshire Post, Bristol Mercury, Scottish Leader, City Press, Chesham Examiner, Labour World, Barrow News, Corriere D'Italia (Rio de Janeiro), Courier de Londres, The Newspaper, Yorkshire Herald, Zoophilist, &c.*, have been received.

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Books and Publications (seven lines and under)	£0 5 0
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Trade and Miscellaneous Advertisements	0 4 6
Every additional Line	0 0 6
Front Page	per Line 0 1 0
Quarter Page	1 10 0
Half a Page	2 15 0
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